FACTORS INFLUENCING MARKETABLE SUPPLY OF AVOCADO FRUIT: A CASE OF LEMO WOREDA IN HADIYA ZONE OF SNNPR, ETHIOPIA

MBA THESIS

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Eyuel Tesfaye Beyene

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I, the undersigned, declare that the research report titled Factors influencing marketable supply of avocado fruit: The Case study of Lemo woreda in Hadiya zone, SNNPR is prepared under the guidance of Dr. Workneh Kassa (PhD) and Lemi Tesfa (PhD candidate).All sources of materials used for the research report have been duly acknowledged.

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Abbreviations

ADLI ……... Agricultural Development Led Industrialization

Africa RISING..... Africa Research in Sustainable Intensification for Next Generation

CSA …….....Central Statistical Authority

ETB ……...Ethiopian birr

FAO……..…... .Food and Agriculture Organization

FIMSAF ……Factors Influencing marketable Supply of Avocado Fruit

GDP ……..…..Gross domestic product

HZDOH …….……Hadiya zone department of horticultural

ILRI……....International Livestock Research Institute

Kg.....Kilogram

m.a.s.l …….……....meters above sea level

Mkt……. Market

MOI ……Ministry of information

MSPAF……Marketable Supply Performance of Avocado Fruit

Qt ……....Quintal

SPSS ……..…...Statistical Package for Social Sciences

TLU……..Tropical Livestock Unit

USAID……..United States Agency for International Development

Woreda…….district /the sub part of the zone/

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Abstract

The avocado production suffers from many limitations such as, lack of well-organized market system, inadequate skill of post-harvest handling and lack of market information system in the study area. The specific objectives of the study to assess market channel, identifying factors influencing market supply of avocado fruit and examining market supply performance of avocado fruits in the study area. Age, education level, livestock holding, farm size, quantity produce, market information, distance to the nearest market, access for transportation and selling price of produce related with market supply performance of avocado fruit. Multi-stage sampling technique was used to draw the sample. The sample size was 115 farmers/suppliers and 10 traders for crosscheck. Data has been collected using well-structured close ended questionnaires by using enumerators from a randomly selected sample of 115 avocado fruit farmers from Lemo District and cross-checking data collected from 10 traders from Hosanna town. The collected data analyzed using Statistical Package for Social Science (SPSS-20); reliability and diagnosis test of the collected data has been checked. Descriptive, correlation and regression analysis has been done. The result reveled that, age, education level, quantity produce, access for market information, access for transportation, distance to the nearest market and selling price of the produce influences market supply performance of avocado fruit at significant level and poor market supply channel, poor market supply performance of avocado fruit in the study area. The study recommends the need for develop market cooperation at the ground level to improve market channel, designing motivation of young farmers' involvement improve adult learning, improve all factors of marketable supply; thus, to improve market supply performance in the local and distance market uplift the income of the producers and or suppliers.

Keywords: Marketable supply, quantity produced, market information, Avocado,

CHAPTER ONE

1. INTRODUCTION

1.1 Background of the study

Worldwide productions of fruit and vegetable crops have grown faster than that of cereal crops. Between 1960 and 2000, the area under horticultural crops worldwide has doubled. Among the main reasons attributable to the growth, high return from horticulture has been reported up to five times higher than the previous one. Promotion of the production and trade in fruits and vegetables has recently become one of the key objectives of developing countries (Lumpkin et al, 2005).

Sub-Saharan Africa focuses on enhancing the income of small holders with Small holder production and the marketing of fruits and vegetables. Fruits account for a substantial fraction of world's agricultural output; some fruits such as apple have acquired extensive cultural and symbolic meanings. Fruits and vegetables are produced seasonally, but the market requires products throughout the year (IFAD, 2003).Compared to most other products, agricultural products are bulkier, more perishable, occupy a lot of space and expensive to transport and store. These product characteristics have their effect on the facilities necessary to market farm products (Kohls and Uhl, 1985).

Agricultural Development Led Industrialization (ADLI, 2001) strategy considers agriculture as the base of growth on account of its potentiality to create linkages with other sectors, surplus generation, and potential market creation. Ethiopian Minster of Information indicated that at present, the Federal and Regional Governments are doing their level best to transform the existing subsistence agriculture in to market oriented commercial production system (MOI, 2002).

As annual report of Hadiya Zone Department of Horticulture, 2019annual production of Avocado fruit of Lemo woreda in Hadiya zone and estimated to be 28,680 and 2,898.1 ton, respectively. Therefore, there is a need to conduct an intensive study to generate information on influencing factors of marketable supply of Avocado fruit.

1.2 Statement of the problem

In Ethiopia the performance of agricultural marketing system is constrained by several factors such as poor quality of agricultural products, absence of market facilities, weak extension services that ignored marketing development, poor linkage of research and extension service, lack of marketing information and intelligent services, excessive value and provide fluctuations, restricted access to credit, and transportation problems (Wolday,1994).

In developing countries, most permanent crops produced by small holder farmers and their product were marketed by the non-public entrepreneurs who operates as marketing chain, and distribute the products to terminal markets. Although the marketing supply is well known, small holder farmers specifically face high cost in accessing markets, inadequate and uncoordinated crop market information systems (FAO, 2007).

Mango and avocado fruit marketing are characterized by having large number of buyers and sellers, free entry and exit and the majority of fruit price is not set by demand and supply of the fruits in the market. The marketing structure of fruit in the study area is not competitive market (Nega Mathewos, 2016).

As HZDOH's annual reports shows that, there is potential of avocado fruit production which attributed to divers Agro-ecology, land suitability and high farmers' demand for the avocado production. Lemo woreda, one of the districts in Hadiya zone, farmers have been

experiencing horticultural crop production including avocado for both home consumption and market as complementary crop of wheat, major cash crop.

As the report reveals that the trend of the avocado production is increasing in the area. However, the avocado production is suffering from many limitations such as lack of well-organized market system, inadequate skill of post-harvest handling, poor quality of produce, and lack of market information system, inadequate access to improved avocado seedlings and poor access to transportation due to roads problem to transport at wet seasons (HZDOH, 2019). Therefore, researcher interested to study that the marketable supply of Avocado fruit in the study area.

1.3 Research questions

The following research questions were developed in order to achieve the intended objectives of the study:

- What are major marketing channels of avocado fruit in the study area?
- What are major factors influencing avocado fruits supplied to the market in the study area?
- How the avocado market performing within the study area?

1.4 Objectives

1.4.1 General Objective

The general objective of this study is to investigate factors that influence marketable supply of avocado fruit in Lemo woreda, Hadiya zone, SNNPR in Ethiopia.

1.4.2 Specific Objectives

- To identify major market channels for avocado fruits in Lemo Woreda of Hadiya Zone.
- To identify the factors influencing market supply of avocado fruits in Lemo Woreda of Hadiya Zone.
- To examine the market supply performance of avocado fruits producers/farmers in Lemo Woreda of Hadiya Zone.

1.5 Significance of the study

From The HZDOH data shows that the quantity of avocado produced during the last five years increased significantly. As it is stated in the annual report of 2019 of HZDOH, various development and research actors like ILRI/Africa RISING, Wachemo University, World Vision, MekaneYesus South Sinodous livelihood improvement projects contributed for the increment of the production.

The senior experts of Lemo woreda office of agriculture and Natural Resource Management has also mentioned the increase and demand creation of avocado production is due to the intervention and contribution of the above indicated actors. Within five years' time, this product expected to be doubled which leads to surplus production.

Therefore, these inspire the researcher to identify and explain for the stakeholders about factors influencing marketable supply of avocado fruit in the study area. Furthermore, this study will help the researcher to gain insight on how to conduct research and it helps other researcher as source material for further study.

1.6 Scope of the study

Geographic area coverage of this study was Upper-Gana and Jawe Kebeles', Lemo woreda, Hadiya Zone in SNNPR with specific focus on factors influencing market supply of avocado fruit. The producer farmers and traders participated in the study but due to financial shortage it was not possible to engage the final consumers in the study.

The season of avocado production considered for the study is 2019.The content of the study was FIMSAF measured Market supply performance of avocado fruits by 5 point likert.

1.7 Limitations of the Study

Majority of farmers were unable to read and answer the questioners, which leads to contact all of the respondents by enumerators. One of the challenges on data collection was unable to contact the owners of the farm due to their own reasons. In addition to this, most respondents were not willing to respond the income part of the questionnaire. To overcome this problem the researcher used 5 point likert methods of scale measurement.

1.8 Organization of the Study

The study was divided into five sections. Chapter one focuses on introductory part of the study, which contains background of the study, statement of the problem, objectives of the study, research questions, significance of the study, scope of the study, limitation of the study and the last but not the least organization of the study. Chapter two exclusively devoted to the review of the literature including key concepts of the problem to related literature on factors of market supply on the market supply performance. Chapter three deals with the methods used to collect

and analyze the data. While chapter four presented analysis of findings and discussion of the empirical data. Chapter five presents summary, conclusions and recommendations of the finding.

CHAPTER TWO

2. REVIEW OF RELATEDLITERATURE

Theoretical review

2.1 Market channels

It is a business structure of interdependent organizations from the point of product origin to the consumer with the purpose of moving products to their final consumption destination (Kotler and Armstrong, 2003).The analysis of marketing channels is intended to provide a systematic knowledge of the flow of goods and services from their origin (producer) to their final destination (consumer).

According to Lunndy et al (2004) market chain actors can be defined as "a people who directly involved in the exchange of goods; and it starts from input suppliers, producers, rural traders or assemblers, processors, urban wholesalers, retailers and consumers."

Lunndy et al (2004) grouped market chain actor into four based on the function they contributed to the market chain system:

2.2 Market

A market is thought of as a meeting point of buyers and sellers, a place where sellers and buyers meet and exchange takes place, an area for which there is a demand for goods an area for which price determining forces (demand and supply) operates. The word "markets" as a single arrangement in which one thing is exchanged for another (Bain and Peter, 1988).

Market is another name for demand. Others define market as a system or an atmosphere or a mechanism that facilitate price fixation and thereby exchange of goods and services (McNair and Hansen, 1956). Markets should, in theory, supply food corresponding to consumer

preferences. Simultaneously, price that consumers are willing to pay for different commodities and grades should be transferred to producers in order to encourage production of that produce which is in demand. Price differences over time and between market locations should correspond to the marketing (transaction) costs incurred, notably those for storage and transport (Shepherd, 1997).

2.3 Marketable supply

Marketed supply refers to the amount actually taken to the markets irrespective of the needs for home consumption and other requirements whereas the marketable surplus is the residual with the producer after meeting the requirement of seed, payment in kind and consumption by farmer (Wolday, 1994).

Moreover, the marketing arrangements at different stages also play an important role in price levels at various stages (from farm gate to the final user). These features make the marketing system of fruits and vegetables to differ from other agricultural commodities, particularly in providing time, form and space utilities. While the market infrastructure is better developed for food grains, fruits and vegetables markets are not that well developed and markets are congested and unhygienic (McCoy and Sharan, 1998).

2.4 Marketing

Marketing has an intrinsic productive value, in that it adds time, form, place and possession utilities to products and commodities. Through the technical functions of storage, processing and transportation, and through exchange, marketing increases consumer satisfaction from any given quantity of output (Mendoza, 1995). Kotler(2003) also stated shortly marketing as the task of creating, promoting, and delivering goods and services to consumers and businesses.

2.5 Agricultural Marketing

It is defined as agriculturally oriented marketing. It embraces all operations and institutions involved in moving farm products from farm to consumers (Pritchard, 1969). It covers all the activities associated with the agricultural production and food, feed, and fiber assembly, processing, and distribution to final consumers, including analysis of consumers' needs, motivations, and purchasing and consumption behavior (Tilahun Negussie, 1983). It is both a physical distribution and an economic bridge designed to facilitate the movement and exchange of commodities from farm to fork. Food marketing (of branded foods) tends to be inter-disciplinary, combining psychology and sociology with economics, whereas agricultural marketing (of unbranded products) is more mono disciplinary, using economics almost exhaustively (Kohls and Uhl, 1985).

2.6 Factors influencing the market supply

Bellemare and Barrett (2006) estimated factors affecting sell of animals in Kenya and Ethiopia. They observed that the net purchase and net sales volume choices depend on expected market participation. The household head sex (female headed), age, family size, herd size, female TLUs, encumbered males, and small stock (sheep and goat) had significant and negative influence on number of animals sold. Unlikely, assets, land holding, other income, encumbered females, and average price of larger stock (camels and cattle) had correlated positively with number of animals sold.

A study conducted by Wolday (1994) in Alaba Siraro district identified factors that affected market supply of food grain (teff, maize and wheat) by using variables such as the size of

output, market access, family size, and income from pepper. He identified that size of output (teff, maize and wheat) significantly and positively affected teff, maize and wheat supplied. On the other hand, access to market significantly and negatively affected volume of sale of teff and maize. Poor accesses to the market negatively affected maize sold while positively affected teff and wheat sold. Family size also significantly and positively affected quantity supplied of teff and wheat while it negatively affected quantity supplied of maize.

A similar study was conducted by Holloway et al (1999) and identified alternative techniques for effecting participation among per-urban milk producers in the Ethiopian highlands. They found that cross breed cow type, local breed cows, education level of household head, extension contact, and farming experience of household head positively affected quantity of milk sold while distance to the market affected the volume of sale negatively.

There are a number of highlighted constraints that hamper further development of market supply. Singh and Rai (1998) identified factors affecting marketed surplus of buffalo milk in Haryana. They observed milk production and price significantly affected marketed surplus positively while land holding and family size negatively affected.

Therefore, from the above studies we can assume that factors influence the market supply of products include: age of the household head, education of the household head, livestock holding, farm size, quantity of produced, access to market information, transportation to nearest market, distance to the nearest market and price of the produce.

2.7 Performance of the market

The performance of certain market depends on the conduct of its sellers and buyers which, in turn, is strongly influenced by the structure of the relevant markets (Scarborough and Kydd,

1992).It is reflection of the impact of structure and conduct on product price, costs and the volume and quality of output (Cramers and Jensen, 1982). If the market structure in an industry resembles monopoly rather than pure competition, then one expects poor market performance.

As a method for analysis the supply chain management paradigm postulates, there exists a relationship between the three levels distinguished. One can imagine a causal relation starting from the structure, which determines the conduct, which together determines the performance of agricultural marketing system in developing countries (Meijer, 1994).

2.8 Socioeconomic Characteristics

2.8.1 Age of the household head

It is a continuous variable and measured in years. Aged households are believed to be wise in resource use, on the other hand young household heads have long investment horizon and it is expected to have either positive or negative effect on volume of avocado fruit sales. The expected sign is positive as age one of the parameters of human capital. As an individual stays long, he will have better knowledge and will decide to participate. Adugna (2009) who found that age of the household head have negative effect on the elasticity of onion supply to the market.

2.8.2 Education of the household head

It is a continuous variable measured in terms of years of schooling. Education broadens farmers' intelligence and enables them to perform the farming activities intelligently, accurately and efficiently. Moreover, better educated farmers tend to be more innovative and are therefore more likely to adopt the marketing systems. Formal education enhances the

information acquisition and adjustment abilities of the farmer, thereby improving the quality of decision making (Fakoya*et al*., 2007). Astewel (2010) found that if paddy producer gets educated, the amount of paddy supplied to the market increases, which suggests that education improves level of sales that affects the marketable surplus. Therefore, this variable is hypothesized to influence volume of avocado fruit sales positively.

2.8.3 Livestock holding

This is a continuous variable measured in tropical livestock unit. Farmers who have a number of livestock are anticipated to specialize in livestock production so that they allocate large share of their land for pasture. Study by Rehima (2006) on pepper marketing showed that TLU showed a negative sign on quantity of pepper sales. On the other hand, it is assumed that household with larger TLU have better economic strength and financial position to purchase sufficient amount of input (Kindei, 2007). But for this study TLU will be hypothesized to influences volume of fruit sales negatively.

2.8.4 Farm size

This variable is a continuous variable and it refers to the total area of farmland that a farmer owns in hectare. In agriculture, land is one of the major factors of production. It is assumed that the larger the total area of the farmland the farmer owns, the higher would be the output. The availability of land enables the owner to earn more agricultural output which in turn increases the marketable supply (Gujarat, 2004.). Therefore, farm size and marketable supply are expected to have direct relationship.

2.9 Factors out of farm

2.9.1 Quantity of produced

It is continuous variable measured in quintals. A marginal increase in avocado fruit production has obvious and significant effect in motivating market supply. Therefore, this variable is hypothesized to have a positive effect on market supply. Astewel's (2010) analytical result showed that, the quantity of paddy produced jointly affected both the probability of market participation and volume of supply. Therefore, it is assumed to affect participation decision and market supply positively. This variable had important influence on market supply. It is expected to influence it positively. It is a continuous variable measured in quintals. Wolelaw (2005) and Bossena (2008) showed the higher they produce, the more likely the household would supply to market. Producers who produce more output that expect to supply more avocado fruit to the market than those who produce less.

2.9.2 Access to market information

Access to market information is assumed to have positive impact on marketable supply of avocado fruit. It is a dummy variable with a value of one if a household head has access to market information and zero otherwise. The general idea is that maintaining a competitive advantage requires a sound business plan. Again, business decisions are based on dynamic information such as consumer needs and market trends. This requires that an enterprise is managed with due attention to new market opportunities, changing needs of the consumer and how market trends influence buying (CIAT, 2004).Therefore those who have access to dynamic information will produce more avocado fruit for market. Farmers marketing decisions are based on market price information. Those farmers who had better information are to be expected to

supply more fruit to the market. Therefore, it is hypothesized that market information is positively related to marketable fruit supply.

2.9.3 Access for transportation to nearest market

It is a continuous variable that is measured in kilometers which farmers waste time to sell their product to the market. Studies by Adugna(2009),Abay(2007) and Rehima(2006) indicated rural communities in remote areas suffer from lack of transportation facilities. The closer to the market the lesser would be the transportation cost and time spent. Therefore, it is hypothesized that this variable is negatively related to marketable surplus of avocado fruit production

However, one of the preconditions for a market economy is that correct information on market conditions must be available and, within reason, accessible to all. Markets should provide the necessary facilities and services to producers and consumers enable price formation to take place and exchange to be facilitated (Andrew, 1997).

2.9.4 Distance to the nearest market

It is the distance of the avocado fruit producer households from the nearest market and it measured in hours of walking time. The closer the market, the lesser would be the transportation charges, reduced walking time, and reduced other marketing costs, better access to market information and facilities. In this study distance to the nearest market is hypothesized to affect volume of avocado fruit sales negatively. Similar issue was studied by Ayelech (2011), on fruit market in Goma woreda identified that poor market access has significant and negative effect on quantity of avocado and mango supplied.

2.9.5 Selling Price of the product

Prices are the result of the functioning of the market and are determined by supply and demand which, in turn, is influenced by costs of production, the costs of marketing and by consumer preferences, among other things. Prices act as signals for the allocation of productive resources in the agricultural sector (Andrew, 1997). The degree of pass-through of world prices in these models depends on two factors: the degree of market power of the marketing intermediaries in the supply chain, and the second-order curvature of the demand function (Fabinger, 2013).

2.10 Empirical Review

Correct decision-making and planning depend on reliable *information* on variable market conditions, which are expressed by changing *prices*. Advocates of free market economies consider price flexibility in a positive light in that it reflects both supply and demand and seasonality in *production* and provides producers with incentives to adapt their production to market requirements (Andrew, 1997).

Ayelech (2011) using SCP approach and multiple linear regressions found that structure of the market indicates that licensing and years of avocado and mango trade experience did not hinder entry into avocado and mango trade, but capital, education and market information were barriers to enter into the trade. Based on regression model for market supply, she has identified quantity of avocado produced; experience, education and price of avocado in the previous year are factors that significantly affect quantity of avocado supplied to the market positively while lack of market access affects the supply negatively.

Again, Abraham (2013) stated that limited access to market, low price of product, lack of storage, lack of transport, low quality of product and lack of policy framework to control the illegal Ethio-Somalia trade route are the major marketing problems. Dendenaet al. (2009) using

value chain analysis on mango indicated that highly disorganized and fragmented industry with weak value chain linkages, long and inefficient supply chains, inadequate information flows and lack of appropriate production were explained as the major marketing problems. They recommended that institutional innovation to reduce the above challenges.

According to Wolday (1994) marketable supply of agricultural product could be affected by different factors including the size of land holding, the output level, family size, market access, price, inputs, formal education, oxen number, accesses to extension and credit services, distance to market, time of selling, access to labor and age. Additionally, (Abay, 2007; Adugna, 2009) found out that marketable supply of vegetables were significantly affected by family size, age of household, distance from main road, number of oxen owned, extension service and lagged price.

According to Assefa (2009) without having convenient marketing conditions, the potential increment in output, rural incomes and foreign exchange could not be effective. Increased production, however, needs to be accompanied by efficient marketing systems. One means that of investigating the efficiency of marketing system is through studying and identifying factors that determine the market chain analysis.

According to Seid (2002) due to small-scale irrigation farmers increased their production and better access to food in HabruWoreda. However, Fruit production in Habruworeda particularly, producers are not selling their produce in an organized manner so that some of their benefit may transfer to the middlemen.

Adugna Gessesse (2009) studied on Analysis of fruit and vegetable market chain in Alamata, Southern zone of Tigray. His general analysis of the study can be concluded as a corner stone to understand the onion, tomato and papaya market chain system. The increasing of farmers in

production and marketing of fruits and vegetables apparent by increasing land allocation and increasing number of participating market actors were indicators for commercialization. Also show that, fruit and vegetable marketing is a means of income providing business opportunities for all actors in the market chain including the producers, brokers, transporters, traders, and processors. The role of brokers in horticulture marketing is significant. They isolate the producers from the traders and make price margins often to the disadvantage of the producers. Therefore, government attention is needed in improving the inefficient market chain through strengthening institutions like cooperatives.

Nega Mathewos (2016) studied on Supply Chain Analysis of Avocado and Mango Fruits in Gedeo Zone. The actors who are participating in production and marketing services of fruits in the study area include producer, local collectors, retailers and consumers. Also he investigate, Mango and avocado fruit marketing in the area is characterized by having large number of buyers and sellers, free entry and exit and the majority of fruit price is set by demand and supply of the fruits in the market.

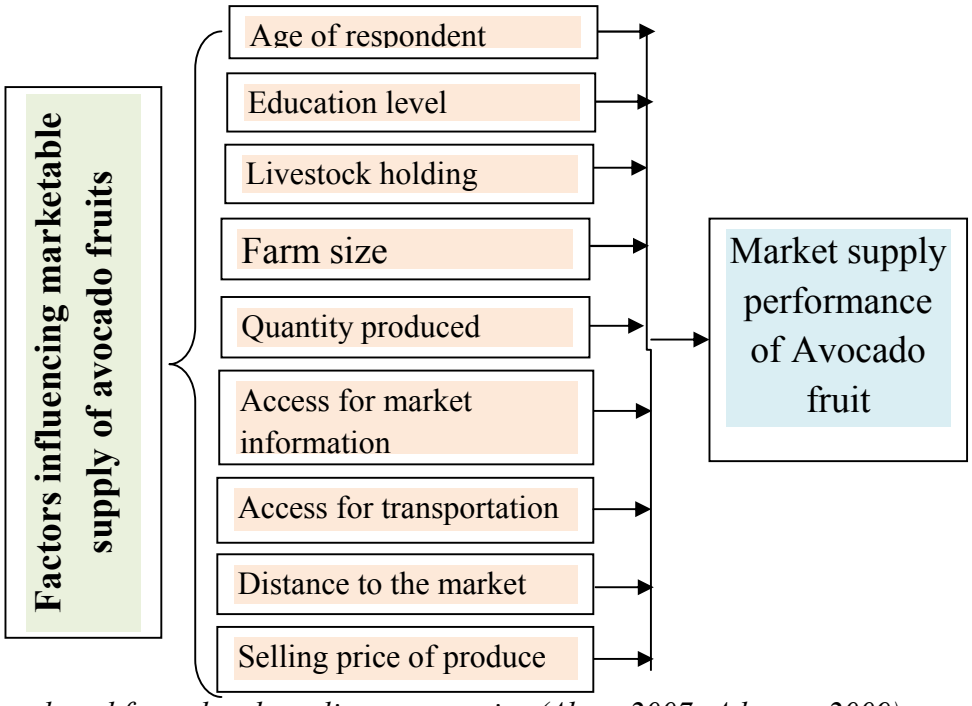
The marketing structure of fruit in the study area is competitive market. Out of the eight variables which are expected to affect the supply of fruits in the area four were found to be significantly related with the supply of the fruits to the market. Quantity produced in quintal of the fruits, price of the fruits and access to the market information are related significantly and positively with the supply of the fruits to the market where as distance from the market is significantly and negatively related with the supply of the fruits to the market (Nega Mathewos, 2016). Even though Avocado have several benefits for the producers, traders and consumers; there is limitation in the sector and few research which is done regards to assessing factors influencing market supply of Avocado fruit in case of Lemo woreda in Hadiya zone. The

researcher inspires to conduct factors influencing market supply of Avocado fruit on the study area is essential.

2.11 Conceptual Framework of the Study

The conceptual framework explains the relationship among the dependent variables and independent variables. Though there are many 'Factors influencing marketable supply of Avocado fruit on market supply performance, this study was focus on limited and common independent variables in market supply of Avocado fruit.

Therefore, depending on previous findings and theories, the researcher was take some of the independent variables like age of the household head, education of the household head, livestock holding, farm size, quantity produce, market information, access for transportation, distance to the nearest market and selling price of produce which could be related positively and negatively with market supply performance of avocado fruit.



Source: Developed from the above literature review(Abay, 2007; Adugna, 2009).

Figure 2.1: The conceptual framework of the study

CHAPTER THREE

3. RESEARCH METHODOLOGY

3.1 Introduction

The main purpose of the research methodology was to explain how the research accomplished, what knowledge was required, what information was needed and how information collected. The study was undertaken thorough a review of basic and contemporary literatures available and identified issues which were influencing marketable supply of Avocado Fruit.

Research methodology consists of study area, research approach, sample design-sampling technique, sample size, source instruments of data collection, and methods of data analysis, ethical issues, validity and reliability of the study.

3.2 Description of the study area

3.2.1 Hadiya Zone

Hadiya Zone is a zone which is found in the Southern Nations, Nationalities, and Peoples' Region (SNNPR) of Ethiopia.

The zone is located on Latitude:7° 39' 59.99" N & Longitude:37° 44' 59.99" E. Hadiya is bordered on the south by KembataTembaro (KT), on the southwest by the Dawro Zone, on the west by the Omo River which separates it from Oromia Region and the Yem Special Woreda, on the north by Gurage, on the northeast by Silte, and on the east by the Alaba Zone; the woredas of Mirab Badawacho and Misraq Badawacho form an exclave separated from the rest of the zone by KT. The administrative center of Hadiya is Hosanna.

Based on the 2014 Census conducted by the CSA, this Zone has a total population of 1,231,196, of whom 612,026 are men and 619,170 women; with an area of 3,593.31 square kilometers, Hadiya has a population density of 342.64 per square kilometer.

While 134,041 or 10.89% are urban inhabitants, a further157,032 individuals are pastoralists. A total of 231,846 households are counted in this Zone, which results in an average of 5.31 persons to a household, and 223,403 housing units. 11 woredas of Hadiya Zone are: Ana Lemo, Duna, Gibe, Gomibora, Hossanna Town, Limo, Mirab Badawacho, Misha, Misraq Badawacho, Shashogo, and Soro.

3.2.2 Lemo Woreda

Lemo is one of the woredas in the Southern Nations, Nationalities, and Peoples' Region of Ethiopia. A part of the Hadiya Zone, Lemo is bordered on the south by the KembataTembaro Zone, on the southwest by Duna and Soro, on the west by Gomibora, on the northwest by Misha, on the northeast by Ana Lemo, and on the southeast by Shashogo. Towns in Lemo include Belesa and Lisana. The town of Hosanna is surrounded by Lemo. Parts of Lemo woreda were separated to create Ana Lemo, Hosanna, Mirab Azernet Berbere and Misraq Azernet Berbere woreda. Based on the (CSA, 2014) Census conducted by the CSA, this woreda has a total population of 118,594, of whom 58,666 are men and 59,928 women; 2,049 or 1.73% of its population are urban dwellers. The majority of the inhabitants were Protestants, with 74.07% of the population reporting that belief, 12.37% were Muslim, 7.2% practiced Ethiopian Orthodox Christianity, and 6.14% were Catholic. Total head of household population of Upper Gana kebeles has 750 whereas Jawe kebeles has 873.

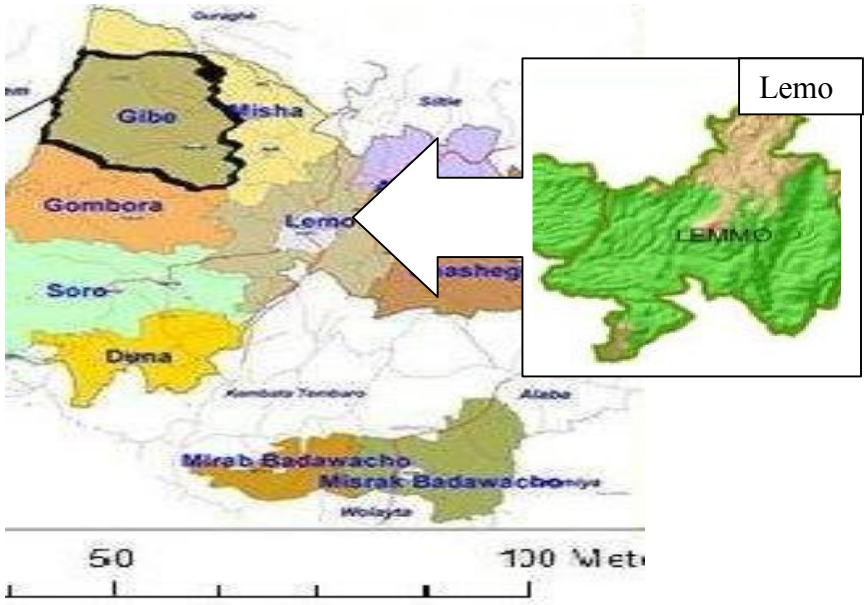


Figure 3.1 Map of Lemo Woreda in Hadiya zone

Source: Google map of Hadiya zone

3.3 Research Approach

MacMillan and Schumacher (2001) define research approach as a plan for selecting subjects, research sites, and data collection procedures to answer the research question(s). They further indicate that the goal of a sound research design is to provide results that are judged to be credible. For Durrheim (2004), research design was a strategic framework for action that serves as a bridge between research questions and the execution, or implementation of the research strategy.

Descriptive research studies were those studies which concerned with describing the characteristics of particular individual, or group. Studies concerned with specific predictions, with narration of facts and characteristics concerning individual, group or situation are all examples of descriptive research studies (Kothari, 2004).

The study adopt empirical investigation with descriptive and inferential research design since the major focus of research was on investigating the influence of factors in marketable supply of avocado fruit Lemo woreda in Hadiya zone. In order to achieve the study objectives, using multiple linier regression econometrics models, to analyze factors influencing marketable supply of avocado fruit; by which influence of independent variables on dependent variable has been analyzed.

3.4 Sources of Data

The required data for the study collected using both primary and secondary data collection methods. The standard questionnaire is useful to be collected the necessary information regarding to the study is adopted from the work of other studies from Salazar (2012) and Mohammed (2014). By using an interview that consists of both open and more of close ended questions were delivered. Primary data was collected from target farmers of upper gana and Jawe kebeles' also fruit trader at Hosanna town whereas secondary data were collected from annual report of Lemo woreda, Hadiya zone department of horticulture and from relevant document.

3.5 Sample Design

3.5.1 Target Population

The target populations were avocado producer farmers of Upper gana and Jawe kebeles in Lemo woreda and also selected avocado fruit traders.

3.5.2 Sampling Technique

The primary goal of a research is to get representative data. To achieve this, we need to either enumerate the whole population or select a representative sample. Such that the researchercan study the smaller group and produce accurate generalization about the larger population (Newman, 2003). Multi-stage sampling technique was used to draw the sample of fruit producer farmers. Firstly, from Hadiya Zone one woreda selected purposively in consideration of the potential of the woreda for avocado production. And then, in similar way, two kebeles were selected from the selected woreda. The respondent farmers were selected by simple randomizing method among the avocado producers in the targeted kebeles. Traders were selected purposively.

3.5.3 Sample Size

Malhortra and Peterson (2006) and Zikmund (2003) stated that, the larger the sampling size of a research, the more accurate the data generated. However, due to time and financial limitations and the nature of the population, sample determination method developed by (Carvalho, 1984), "Archival application of mathematical sampling techniques". (Quoted by national Archive report Richmond, 2005) was preferred to be use by researcher as a method to determine a sample size.

Table 3.1. Sample size determination

Population size	Small sample	Medium sample	large sample
51-90	5	13	20
91-150	8	20	32
151-280	13	32	50
281-500	20	50	80
501-1,200	32	80	125
1,201-3,200	50	125	200

Source: Carvalho(1984) as quoted by national Archive report of Richmond(2005).

Population size of the research area is 552 but due to time and financial limitations, sample for data collection was used the method developed by Carvalho(1984), "Archival application of mathematical sampling techniques". Therefore, the sample size was 115 (115/542=0.212 i.e. 59 from Upper gana and 56 from Jawe) farmers and 10 traders.

Table3.2. Sample size determination for the study

Sampling area/kebeles	Target population	Sample size
Upper gana, Jawe and traders	278 + 264=542 +10=552	**552**
Total respondents/Sample size	*59+56+10=125*	***125***

3.6 Operationalization and measurement of variables

The dependent variable in this study was the marketable supply performance of avocado fruits. It was measured subjectively using a five point Likert scale.

Table 3.3. Operationalization and measurement of variables

N/o	Variable	Definition/description	Measurement	Expected sign (+/-)
1	Livestock holding	Amount of livestock owned by a household in terms of tropical livestock units (TLU)	Continuous variable	-
2	Access for transportation	The extent to which a household has an access for transportation for produce to sell	Five point Likert (1= strongly disagree, 5= Strongly agree)	+
3	Quantity Produce	Quantity of fruit harvested from each farm; which is measured by quintal.	Continuous variable	+
4	Selling price	Refers the level of prices that farmers sell their avocado in the market.	Five point Likert (1= strongly disagree, 5= Strongly agree)	+
5	Market information	Information such as consumer needs and market trends. Farmers marketing decisions are based on market price information. Those farmers who	Five point Likert (1= strongly disagree, 5= Strongly agree)	+

		had better information are to be expected to supply more fruit to the market.		
6	Distance to the nearest market	It is the distance of the avocado fruit producer households from the nearest market and it measured in hours of walking time.	Five point Likert (1= strongly disagree, 5= Strongly agree)	-
7	Education of the household head	Refers the level of education of a household head	1= Illiterate, 2= up to grade 5, 3= elementary completed, 4= junior school completed, 5= traditional education	+
8	Farm size	It refers to the total area of farmland that a farmer owns in hectare.	Continuous variable	+
9	Age of the Household head	It refers knowledge and wisdom in resource use, measured in years	Continuous variable	-

Source: conceptual framework of this study

3.7 Data collection Instruments

Primary data source was conducted on cross-sectional survey with semi-structured questionnaires, which administered by interviewing to sample of avocado producer, farmers located in Upper gana and Jawe; Lemo woreda and Hadiya zone.

A questionnaire was a pre-formulated with written set of questions to the respondents' and recording the answers within described alternatives closely.

The researcher used to scale respondents' responses by using likert scale. For this study a Likert scale of five alternatives was used to obtain data or measure the level of agreement

concerning the influence of factors on the performance of marketable supply on Avocado fruit in Lemo woreda, Hadiya zone.

The questionnaires were prepared in English and translated to Amharic before ready to ask the respondents. Likert scale was interval scales that specifically, for this research used five anchors of 1) strongly disagree 2) disagree 3) neutral 4) agree and 5) strongly agree.

The questionnaires had four parts: The first part of the questionnaires was about the demographic characteristics' information of respondents. The second section designed to measure the market channel of avocado fruit. The third part of the questioner was about the performance of marketable supply of avocado fruit and the fourth part of the questionnaires was about the influence of factors of market supply of avocado fruits in Lemo woreda, Hadiya zone.

3.8 Data analysis procedure

After the data was collected using primary data sources (questionnaire) and secondary data sources, it was prepared in readiness for analysis by editing, handling blank responses, coding, categorizing and keying into statistical package for social sciences (SPSS-20) computer software for analysis. SPSS-20 was used to produce descriptive and inferential statistics, and which was used to drive conclusions and summarization regarding the population.

After data coding, the tools of Statistical Package for Social Sciences (SPSS-20) employed. In this research descriptive statistics and econometric analysis were applied for analyzing the data. Descriptive statistics such as frequency, percentages and mean used to describe the characteristics of the data, whereas multiple linear regression models used to see the

relationship among the dependent and independent variables. The econometric model specifications of marketable supply function in equation:

$Y=\beta 0+\beta 1X1+\beta 2X2+\beta 3X3+\beta 4X4+\beta 5X5+\beta 6X6+\beta 7X7+\beta 8X8+\beta 9X9 + e$

Where Y= dependent variable,

$\beta 0$= the slope of the equation,

ß1...ß2….ßn= coefficients to estimates,

X1….X2… Xn= independent variables and

e is the error term of the regression equation.

Hence, the equation for the quantity of avocado supplied is:

Quantity of Avocado fruit Supplied to the market = $\beta 0$ + $\beta 1$ age of the household head + $\beta 2$ education of the household head + $\beta 3$ TLU + $\beta 4$ farm size + $\beta 5$ quantity of produced + $\beta 6$ access to market information + $\beta 8$ transportation to nearest market + $\beta 8$ distance to the nearest market+ $\beta 9$ price of the product +error term of the regression.

3.9 Ethical Clearance

Formal letters were written to Hadiya zone and Lemo woreda departments of horticulture and concerned authorities of the office from Wachemo University, School of business and economics, Department of Management.

The data collection was started after approval from the parties mentioned above. In addition to this, name of the farmers and traders were not including in the questioner to maintain confidentiality.

3.10 Diagnosis of Test

Before applying regression analysis, some tests were conducted in order to ensure the appropriateness of data to assumptions regression analysis.

3.10.1 Reliability/validity Test

All variables analyzed by using SPSS-20 statistical software' and it ranged from 0.812 – 0.951 as showed the below table, therefore the questioners were properly measure the specific independent variables.

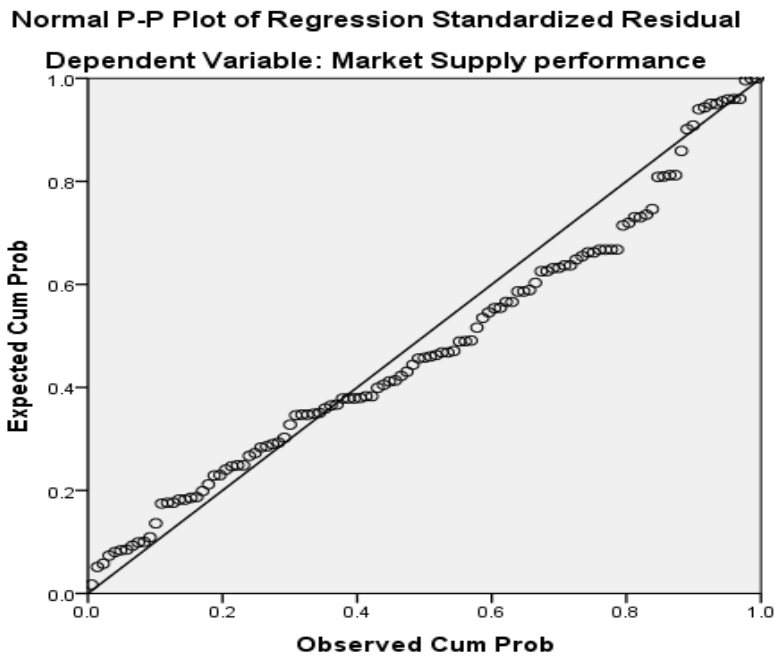
Table 3.4 Reliability/validity statistics

Tested Variable	Cronbach's Alpha	N of Items
Market supply performance	.951	6
Quantity produced	.875	6
Market information	.877	7
Access for transportation	.876	6
Distance to the nearest market	.815	4
Selling price of produce	.812	6

Source: Developed from own study (2020)

3.10.2 Linearity Test

Linearity refers to the degree to which the change in the dependent variable was related to the change in the independent variables. To determine whether the relationship between the independent variables (Age, Education, Livestock holding, Farm size, Mkt Information, Quantity produce, transportation to the nearest Mkt, Distance to the nearest Mkt and Selling price of the produce), and the dependent variable i.e. MSP linear; plots of the regression residual through SPSS-20 software has been used.



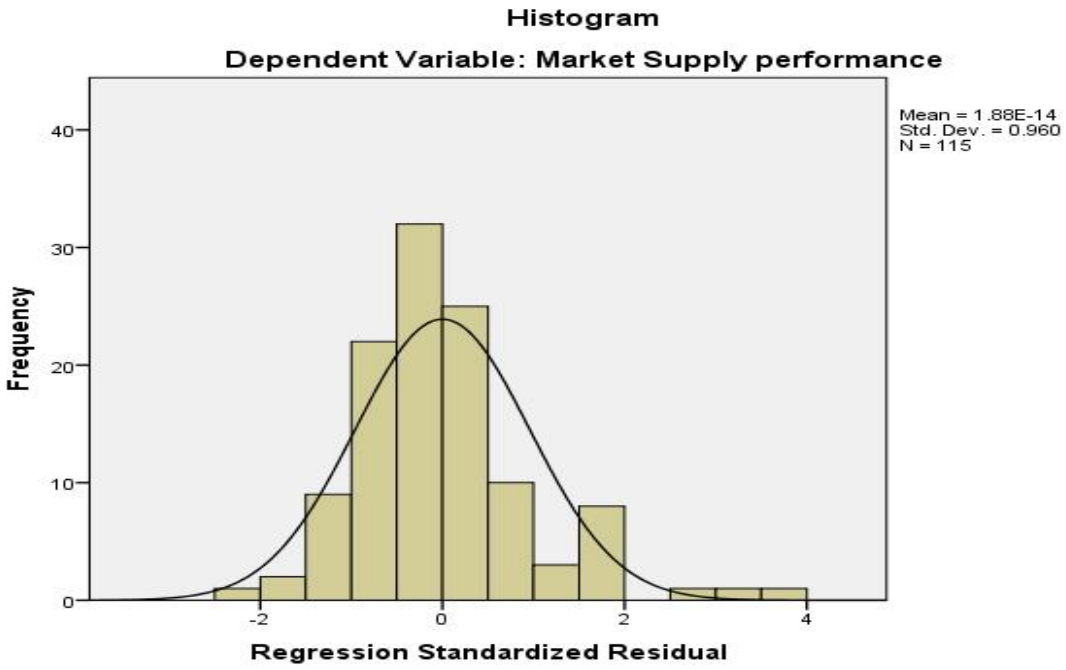
Source: Own Survey result (2020)

Figure 3.2 Frequency Distribution of Standardized Residual by p-p plot for linearity test

The scatter plot of residuals shows no difference in the spread of the residual as look from left to right on figure. Similarly, the above figure shows the normal distribution of residuals its mean of zero. Hence the normality assumption was fulfilled as required based on the above figure, it was possible to conclude that the inference that the researcher made about the population has been valid.

3.10.3 Normality Test

Figure shows the frequency distribution of the standardized residuals compared to a normal distribution. Although, there were some residuals (those occurring around 0) that were relatively far away from the curve, many of the residuals were fairly lose. Moreover, the histogram was bell shaped which lead to infer that the residuals were normally distributed.



Source: Own Survey result (2020)

Figure 3.3 Frequency Distribution of Standardized Residual by histogram for normality test

3.10.4 Multicollinearity Test

After the normality of the data in the regression model was met, the next step to determine whether there was similarity between the independent variables in a model, it was necessary to Multicollinearity tests. Similarities between the independent variable were result in a very strong correlation. In addition, Multicollinearity tests done to avoid habits in decision making process regarding the partial effect of independent variables on the dependent variable. Test Multicollinearity as a basis the VIF values of Multicollinearity test results using SPSS-20.

Table 3.5: Multicollinearity Test

Model		Collinearity Statistics	
		Tolerance	VIF
	Age of respondent	.348	2.870
	Education level of respondent	.328	3.047
	Average Livestock Holding per Household	.689	1.451
	Farm size	.664	1.506
	Quantity produce	.799	1.252
	Market Information	.938	1.066
	Access for Transportation	.749	1.335
	Distance to the nearest market	.648	1.542
	Selling price of produce	.695	1.439

Source: Own Survey result (2020)

Based on the table, the values obtained from Collinearity statistics (VIF) was between 1 and 10; tolerance value more than 0.328. Therefore, it can be concluded that there are no Multicollinearity symptoms between the components of the independent variables.

Thus, from an examination of the information presented in all the three tests i.e. Multi Collinearity, Normality and Linearity tests the researcher concluded that there are no significant data problems that would lead to say the assumptions of classical linear regression have been seriously violated.

3.10.5 Summarized Regression ANOVA table

Table 3.6 The regression ANOVA table

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	7.763	9	.863	154.509	.000b
	Residual	.586	105	.006		
	Total	8.349	114			

a. Dependent Variable: Market Supply performance

b. Predictors: (Constant), Age of respondent, Education level of respondent, Livestock Holding per Household, Farm size, Quantity produce, Market Information, Access for Transportation, Distance to nearest market and selling price of produce.

From ANOVA test in table, shows that the Significant Value 0.05 is greater than the calculated value 0.000. It reflects there was a statistically significant correlation between dependent variable and independent variable at 5% significant level. Which means the independent variables Age of respondent, Education level of respondent, Livestock Holding per Household, Farm size, Quantity produce, Market Information, Access for Transportation, Distance to nearest market and selling price of produce; have great contribution to improve market supply performance in study area. But it does not mean that all these factors have equal significant correlation with factors of market supply performance of avocado fruit.

CHAPTER FOUR

4. DATA PRESENTATION, ANALYSIS AND INTERPRETATION

4.1 Introduction

This chapter gives insight into the descriptive and inferential result of Avocado marketable supply in the Lemo woreda in the Hadiya zone. The chapter specifically described the nature of data gathered in the study and also provided a summary of the variables. The information presented in this chapter was derived from descriptive and inferential analysis of the collected data for the study. Information on the basic demographic characteristics of the sampled farmers were discussed with specific reference to market supply performance measurement. The results were presented using descriptive statistics such as mean, frequencies and standard deviation and econometric analysis such as correlation and regression. This study used a sample size of 125 from a population of 542 avocado suppliers' and10 traders in the Lemo woreda in the Hadiya zone. The traders were from Hosanna town and farmers that participated in this study were from 18 villages within the two kebeles.

4.2 Response Rate

The study administered a total of 125 (100%) questionnaires, from which 115 from farmers (suppliers) and 10 from traders. In total, 125 (100%) questionnaires were completely filled; all questionnaires were appropriately filled by enumerators. So, the analysis was made based on 115 producers and 10traders' successfully responded questionnaires and done in line with the research questions and objectives.

4.3 Result and discussion

Descriptive statistics such as frequency, percentages and mean used to describe the characteristics of the data as follows:

Table 4.1 Socioeconomic characteristics

	Years	Frequency	Percent
Age	36-44	20	17.4
	45-55	25	21.7
	56-65	42	36.5
	>65	28	24.3
	Total	115	100.0
Education level	0=illiterate	40	34.8
	1-5grade	23	20.0
	5-8grade	22	19.1
	8-10 grade	12	10.4
	11-12 grade	18	15.7
	Total	115	100.0
Farm size	0.5-1ha	16	13.9
	1-1.5 ha	35	30.4
	>1.5 ha	64	55.7
	Total N	115	100.0

Source: Own survey result (2020)

The above Table 4.1 shows that, the demographic characteristics of Avocado Producer farmers in the study area. Majority of the respondents i.e. 36.5% within 56-65 years and 24.3% were above 65 years old; it indicates that the lack of interest of young people in farming may have a negative impact on agricultural development because the current farmers are aged. This may be because of the emigration of young people from rural areas to urban areas for non-agricultural jobs.

Based on Table 4.1, Majority educational level of the respondents i.e. 34.8% (40) so far not entered in class for learning, 20% (23) of respondent Learned in 1-5 grade, therefore,

educational level of the sample majority yet not learned in class. Which show that the farming in the study area practiced by traditional ways.

Based on Table 4.1, Majority farm size of the respondents i.e. 30.4% (35) respondents had been 1.0-1.5 ha of land and 55.7 % (64) respondents had been more than 1.5 ha of land. According to the above table the number of participants who had more than 1.5 ha of land size higher than the others. Generally the above table shows that majority of the land had been cultivated by aged and not formally learned farmers.

Table 4.2 Livestock holding (TLU)

		Range	Frequency	Percent
Valid	Number of Cows	1-3 Livestock	38	33.0
		4-7Livestock	65	56.5
		>7Livestock	12	10.4
		Total	115	100.0
	Number of Oxen	1-3 Livestock	63	54.8
		4-7Livestock	52	45.2
		Total	115	100.0
	Number of Goats	1-3 Livestock	31	27.0
		4-7Livestock	72	62.6
		>7Livestock	12	10.4
		Total	115	100.0
	Number of Sheep	1-3 Livestock	37	32.2
		4-7Livestock	66	57.4
		>7Livestock	12	10.4
		Total	115	100.0
	Number of Donkey	0	15	13.0
		1-3 Livestock	100	87.0
		Total	115	100.0

Source: Own survey study (2020)

Based on Table 4.2 shows that: Majority of the respondents have been 4-7 Cows 56.5%, 1-3 Oxen,54.8%, 4-7 Goats 62.6%, 4-7 Sheep57.4% and 1-3 Donkey 87% respectively.

Table 4.3 Frequency and percentage of Market channel

		Frequency	Percent
Valid	Neutral	22	19.1
	Agree	56	48.7
	Strongly agree	37	32.2
	Total	115	100.0

Source: Own survey study (2020)

The above tables 4.3 show, the undecided respondents were 19.1% from the total respondents; the rest 80.9% of respondents were agreed and strongly agreed in the supplying their produce through all types of market channel; i.e. Local collectors, Consumer buyers, Wholesalers and retailers. It shows that, they lack well-structured known market channel of Avocado fruits.

Table 4.4 Descriptive Statistics of market channel

	Missing	N	Mean	Std. Deviation
I can sell all produce directly for the consumer buyers	0	115	4.09	.732
I am supplying the produce for the local collectors but not directly to the consumer	0	115	4.30	.772
I am supplying the produce for the wholesalers	0	115	3.93	.943
I am supplying the produce for the retailers	0	115	4.05	.647

Source: own survey result (2020)

The four (4) items used to measure Market channel of avocado fruit as shown on above Table 4.4 Most of the respondents were with highly agreed in supplied for local collectors, consumer buyers and the retailers (*Mean*=4.30, 4.09 and 4.05respectively). Most of the respondents were slightly agreed in supplied for the wholesalers (*Mean*=3.93).

Table 4.5 Frequency and percentage of performance of Market Supply

		Frequency	Percent
Valid	Neutral/Undecided	63	54.8
	Agree	52	45.2
	Total	115	100.0

Source: Own survey study (2020)

The above table 4.5 shows that, 54.8% of respondents were undecided/neutral and 45.2% of respondents were agreed for positively asked market supply performance questioners. those questioners were: - There is high demand for avocado fruit in the market, I can sale all supplied avocado fruit in the market, I can get the reliable price from the sales of avocado fruit, Market price of avocado fruit is exceeds from the cost of produce, I am happy in marketing of avocado fruit and I want to expand the farm of Avocado tree. It shows that the market supply performance was under question. It needs improvement.

Table 4.6 Frequency and percentage of FIMSAF

		Frequency	Percent
Quantity produce	3(Neutral)	2	1.7
	4(Agree)	86	74.8
	5Str.Agree)	27	23.5
	Total	115	100.0
Market Information	4(Agree)	68	59.1
	5St.Agree)	47	40.9
	Total	115	100.0
Access for Transport	1(Str. Disagree)	1	.9
	2(Disagree)	86	74.8
	3(Neutral)	26	22.6
	4(Agree)	2	1.7
	Total	115	100.0
Distance to nearest market	1(Stro.Disagree)	7	6.1
	2(Disagree)	33	28.7
	3(Neutral)	65	56.5
	4(Agree)	10	8.7
	Total	115	100.0
Selling price of produce	3(Neutral)	28	24.3
	4(Agree)	87	75.7
	Total	115	100.0

Source: Developed from own survey data (2020)

The above table 4.6 shows that, 98.3% of respondents were agreed and strongly agreed for quantity produced. Market information questioners were agreed and strongly agreed on 100% of respondents; 98.3% of respondents were undecided, strongly disagreeing and disagreeing, for access for transportation. The above table 4.6 shows that, 91.3% of respondents were undecided, strongly disagreeing and disagreeing for distance to the nearest market and 24.3% of respondents were undecided/neutral, and 75.7% agreed for selling price of produce.

The above table summarized as, the quantity produce, market information and selling price of the produce were good in the study area; but access for transportation and distance for the nearest market were needs improvement to maximize market supply performance of Avocado fruit in the study area.

Table 4.7 Descriptive Statistics of FIMSAF

	N	Mean	Std. Deviation
Quantity produce	115	4.17	.431
Market Information	115	4.30	.376
Access for Transportation	115	2.32	.432
Distance to nearest market	115	2.57	.632
Selling price of produce	115	3.76	.391

Source: Own survey result (2020)

The twenty-nine (29) items used to measure factors Market supply of avocado fruit and categorized into five components as shown on above Table 4.7. Most of the respondents were with highly agreed in Quantity fruit produceand access for Market information; slightly agreed in selling price of produce not agreed in access for transportation and in distance to the nearest market to supply the produce.

Table 4.8 Descriptive Statistics of Market performance of suppliers

	N	Mean	Std. Deviation
There is high demand for avocado fruit in the market	115	3.33	.508
I can sale all supplied avocado fruit in the market	115	3.34	.544
I can get the reliable price from the sales of avocado fruit	115	3.28	.522
Market price of avocado fruit is exceeding from the cost of produce	115	3.30	.516
I am happy in marketing of avocado fruit	115	3.33	.558
I want to expand the farm of Avocado tree	115	3.36	.516

Source: Own survey result (2020)

The six (6) items used to measure Market supply performance of avocado fruit as shown on the above Table 4.8 Most of the respondents were with neutral and near to neutral for the asked questioner.

Table 4.9 Descriptive Statistics of Market performance of traders

	N		Mean	Std. deviation
	Valid	Missing		
I had have good profit in the last years from	10	0	4.00	0.000
I want to continue Avocado fruit sale in the future	10	0	4.03	.184
I had reliable market information before taking	10	0	4.03	.184
I had the nearby market price information before sold of avocado fruit	10	0	4.03	.184
Here was good selling prices for avocado fruit	10	0	4.03	.184
I could decided the selling price of avocado fruits in market	10	0	4.03	.184
Avocado supply from producers and local collectors were good in the past years	10	0	4.03	.184

Source: Developed from own result (2020)

The above table 4.9 shows that the traders agreed on having good profit, motivation on trading of avocado fruit, in getting market information, having good market price, in decision making

on the price of the market and getting continuous supply from producers and local collectors from the study and neighboring zones.

4.4 Trends of the Avocado expansion

Table 4.10 trend of Avocado expansion

S/N	Woreda	No. of seedlings	Number of producers	Year/E.C	% increments
1	Lemo	2630	448	2016	-
2	Lemo	4900	1327	2017	46.3%
3	Lemo	7160	1631	2018	31.6%
4	Lemo	11250	2996	2019	36.6%

Source: Hadiya zone horticultural department (2011E.c).

As shows the above table 4.10, Lemo woreda in Hadiya zone, increasing in planting of avocado fruit tree and resulted with surplus Avocado fruit production in the near future.

4.5 Focus group discussion (FGD)

The number of FGD representative participant was 18, which were selected purposively from avocado producers 18 villages of two kebeles. As the reply of farmers, there has been increment in production of Avocado fruit yearly, the main reasons for this increment in production of Avocado fruit were: - ILRI/Africa RISING Project innovated and promoted new improved variety, high yielding, early maturing good to consume in 2014at the study area; then zonal level scaled up of improved variety done through Hadiya Zone &Lemo Woreda agricultural office.

But lack of accessibility of transportation and formal market channel, resulted in deficient in of getting reasonable market price and ultimately poor market supply performance of the fruits of avocado.

4.6 Partial Correlation matrix between variables

Table 4.11 Partial Correlation matrix between independent variables

Control Variables			Age	Education level	Livestock holding	Farm size	Quantity produce	Market Info	Transport	Distance to nearest market
Mkt Supply Performance	Education level	Correlation	**-.762**							
		Significance (2-tailed)	.000							
		Df	112							
	Livestock Holding	Correlation	**.455**	-.505						
		Significance (2-tailed)	.000	.000						
		Df	112	112						
	Farm size	Correlation	.410	-.289						
		Significance (2-tailed)	.000	.002	.001					
		Df	112	112	112					
	Quantity produce	Correlation	.160	-.088	.073	.331				
		Significance (2-tailed)	.090	.350	.442	.000				
		Df	112	112	112	112				
	Market Information	Correlation	-.039	-.020	-.083	-.077	-.210			
		Significance (2-tailed)	.677	.833	.378	.416	.025			
		Df	112	112	112	112	112			
	Access for Transport	Correlation	.029	.012	-.057	-.186	-.334	-.385		
		Significance (2-tailed)	.762	.898	.550	.048	.000	.000		
		Df	112	112	112	112	112	112		
	Distance to market	Correlation	-.141	.190	.014	-.088	-.245	-.341	.058	
		Significance (2-tailed)	.135	.043	.880	.354	.009	.000	.539	
		Df	112	112	112	112	112	112	112	
	price of produce	Correlation	.255	-.048	.106	.401	.263	-.273	-.132	-.273
		Significance (2-tailed)	.006	.609	.260	.000	.005	.003	.162	.003
		Df	112	112	112	112	112	112	112	112

Source: Own survey result (2020)

The above table 4.11 shows that, under the control variable of market Supply Performance, the partial correlation between two independent variables were: in between (-0.02 up to 0.455).

The correlation coefficient Age and education level highly negatively correlated (-0.762) andAge and Livestock holding were highly positively correlated (0.455); the others relation in between -1 and +1.Thus -1 means perfectly negatively correlated, 1 means perfectly positively correlated where as 0 means neutral or no relation with dependent/control variable.

Table 4.12 Bivariate correlation matrix MSP with independent variables

		Age	*Education level*	*Average Livestock*	*Farm size*	*Quantity produce*	*Market Information*	*Transport*	*Distance to market*	*price of produce*
Market Supply performance	Pearson Correlation	-.135	.237*	.118	.089	.334**	.544**	.540**	.758**	.424**
	Sig. (2-tailed)	.151	.011	.208	.343	.000	.000	.000	.000	.000
	N	115	115	115	115	115	115	115	115	115

Source: SPSS analysis of own data

The Above table 4.12 shows that: correlation in between MSP and highly negatively correlated with Age of and highly positively correlated with Distance to the nearest Mkt (0.758) with MSP.

Table 4.13 Model summary of Factors influencing marketable supply of Avocado fruits on market supply performance

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.964a	.930	.924	.075

Source: Questionnaire and SPSS output (2020

a. Predictors: (Constant), Farm size, Mean Distance to market, Mean Market Information, Average Livestock Holding per Household, Mean Quantity produce, Mean Transport, Mean price of produce, Age of respondent, Education level of respondent.

The above table 4.13 shows that the variables predicted 93.0 %(R^2 = 0.930) variation in the dependent variable has been explained by the independent variables, the rest 7% determined by other variables.

Table 4.14 Econometric analysis of market performance of Avocado fruit

Unstandardized Coefficients	Standardized Coefficients			Sig.	
	B	Std. Error	Beta	t	P
(Constant)	.119	.132		.901	.369
Age of respondent	-.034	.012	-.128	-2.917	.004
Education level of respondent	-.019	.008	-.103	-2.276	.025
Average Livestock Holding per Household	.018	.020	.028	.912	.364
Farm size	-.016	.012	-.043	-1.355	.178
Quantity produce	.150	.018	.239	8.267	.000
Market Information	.303	.019	.421	15.756	.000
Transport access	.199	.019	.318	10.633	.000
Distance to market	.197	.014	.461	14.370	.000
price of produce	.175	.021	.253	8.156	.000

Source: from own study (2020)

Dependent Variable: Mean Market Supply performance

Based on the result shown in the above Table 4.14, an increase the number of quantity produce, improve market information, improve access for transportation, improve distance to the nearest market and increase selling price of Avocado fruit could increase market supply performance of Avocado fruit(MSPAF); because the significance level was P=0.000(i.e. P<0.05). However, it declines with the aged (high age) farmers' involvement (increasing young farmers' participation) and reducing illiteracy (increasing education)..

The values for the regression weights are as follows:

Y=0.119 -0.128Ag - 0.103Ed + 0.028Ls - 0.043Fs + 0.239Qt + 0.421Inf + 0.318Tr + 0.461Di + 0.253P + 0.132

Where:-

Y=Market supply performance, **Ag**= Age of respondent, Ed= Education level, **Ls**= Livestock Holding, **Fs**= Farm Size, **Qt**= Quantity produce, **Min**= Market Information, **Tr**= Access for Transportation, **Di**= Distance to the nearest Market, **P**= Selling price.

Age of respondent: as the finding shows that (*P*= 0.004) therefore (P< 0.05) and (*β* = -0.128) there was weakly associated with market performance of Avocado fruit (MSPAF). Age of respondents showed that *negative* association with the market supply performance of avocado fruits. This implies that as Age of a household increasing by one year, the performance level of avocado fruit market supply decrease by 0.128 units. According to Adugna (2009), study similar finding found that age of the household head have negative effect on the elasticity of onion supply to the market.

Education level: as the finding shows that (*P*= 0.025) therefore (P< 0.05) and (*β*=-0.103) there was weakly associated with the finding market performance of Avocado fruit (MSPAF). Education level of the household showed that *negative* association with the market supply performance of avocado fruits. This implies that as education level of a household decreasing by one-year formal schooling, the performance level of avocado fruit market supply decrease by 0.103 units. According to Astewel (2010), studied and suggests that education improves level of sales that affects the marketable surplus.

Live stockholding: shows that (*P*= 0.364) therefore (*p*>0.05) there was no association with market performance of Avocado fruit (MSPAF).

Farm Size*:* as the finding shows that (*P*= 0.178) therefore (*P*>0.05) there was no association with market performance of Avocado fruit (MSPAF).

Quantity produce: the finding shows that (*P*= 0.000) therefore (P< 0.05) and (*β=0.239)* there was strongly associated with market performance of Avocado fruit (MSPAF). Regression analysis result indicated that quantity produced affects *positively* the market performance of Avocado fruits at less than 5% probability level. The relationship between the quantities produces and market performance of avocado fruits are determining factor in explaining market

supply of avocado fruit in the study area. This implies that as quantity produce increases by one unit, the performance of market supply of avocado fruits increases by 0.239 units. According to Wolelaw(2005) and Bossena (2008), study showed the higher they produce, the more likely the household would supply to market.

Market Information: the finding shows that (*P*= 0.000) therefore (P< 0.05) and (*β=0.421)* there was strongly associated with market performance of Avocado fruit (MSPAF). Regression analysis result indicated that Market Information affects *positively* the market performance of Avocado fruits at less than 5% probability level. The relationship between the Market Information and market performance of avocado fruits are determining factor in explaining market supply of avocado fruit in the study area. This implies that as Market Information increases by one unit, the performance of market supply of avocado fruits increases by 0.421 units. This study is similar with Abay's; market information is positively related to marketable fruit supply (Abay, 2007).

Access for Transportation: the finding shows that (*P*= 0.000) therefore (P< 0.05) and (*β=0.318)* there was strongly associated with market performance of Avocado fruit (MSPAF). Regression analysis result indicated that access for transportation affects *positively* the market performance of Avocado fruits at less than 5% probability level. The relationship between the access for transportation and market performance of avocado fruits are determining factor in explaining market supply of avocado fruit in the study area. This implies that as access for transportation increases by one unit, the performance of market supply of avocado fruits increases by 0.318 units. This study is aligned with (Adugna, 2009; Abay, 2007 and Rehima, 2006) studies, which indicated particularly, rural communities in remote areas suffer from lack of transportation facilities.

Distance to the nearest Market: the finding shows that (*P*= 0.000) therefore (P< 0.05) and (*β=0.461)* there was strongly associated with market performance of Avocado fruit (MSPAF). Regression analysis result indicated that distance to the nearest market affects *positively* the market performance of Avocado fruits at less than 5% probability level. The relationship between the distance to the nearest market and market performance of avocado fruits are determining factor in explaining market supply of avocado fruit in the study area. This implies that as distance to the nearest market decrease by one unit, the performance of market supply of avocado fruits increases by 0.461 units. It is similar with Nega Mathewos's finding distance from the market is significantly and negatively related with the supply of the fruits to the market (Nega Mathewos, 2016).

Selling price: the finding shows that (*P*= 0.000) therefore (P< 0.05) and (*β=0.253)* there was strongly associated with market Performance of Avocado fruit (MSPAF). Regression analysis result indicated that selling price affects *positively* the market performance of Avocado fruits at less than 5% probability level. The relationship between the selling price and market performance of avocado fruits are determining factor in explaining market supply of avocado fruit in the study area. This implies that as selling price increases by one unit, the performance of market supply of avocado fruits increases by 0.253 units. Which is aligning with the study of Wolday (1994), marketable supply of agricultural product could be affected by market price.

CHPTER FIVE

5. Summary, Conclusion, Recommendation and Suggestion of Further study

5.1 Summary of the study

This study presents the factors influencing marketable supply of avocado fruit at two kebeles of Lemo woreda in Hadiya zone. The main three research questions examined in this paper: What are major marketing channels of avocado fruit in the study area? What are major factors influencing avocado fruits supplied to the market in the study area? And how the avocado market is performing within the study area?

To answer the research questions, primary a survey data collected from producer's farmers and secondary data was collected from Lemo woreda and Hadiya zone Horticultural office. The qualitative and quantitative type of data was collected and analyzed by using SPSS-20.

The summary of the result and discussion:

5.1.1 Summary of Socioeconomic result

From the descriptive analysis results 34.8% of the farmers indicated that they were not attended School, 39.1% of the farmers indicated that they were only attained elementary education(1-8grade), 26.1% of the farmers indicated that they were attended Secondary education (9-12grade). The mean age for the farmers was 55-65 with the maximum age being > 65 and the minimum being 34. The mean age was an indication that most youth did not take part in agricultural activities.

The results also indicated that 13.9% of the farmers were in possession of 0.5-1.0ha of land, 30.4% of the farmers were in possession of 1.0-1.5ha of land and 55.7% of the farmers were in

possession of >1.5ha of land. Most (80.9) of the farmers indicated that they sold their produce to informal markets mainly because they were unable to formal markets, only 19.1% of the farmers indicated that they were undecided/neutral to the surveyed questioner.

The female traders were 20% of the total of 10 respondents; the rest 80 % of respondents were male; and 20% of traders were 25-35 years old, 70% of traders were 36-44 years old and 10% of the traders were 45-55 years old; from the surveyed data grade 8-10 studied 20% of the respondents, 11-12 grade 50% and 12+ (diploma and above) graduated were 30% of the total respondents of the traders.

The high aged farmers or suppliers and illiteracy for formal school resulted in reduction of market performance of avocado fruit in the study area.

5.2 Conclusion

The study of factors influencing marketable supply of avocado fruits Lemo woreda in Hadiya zone summarized in the variables under consideration through the study were Age, education level, livestock holding, farm size, quantity produce, market information, Access for transportation, distance to the nearest market and selling price of avocado fruit.

In addition with, market channel and market supply performance measured by using four and six questioners respectively. FGD and traders survey has been done.

According to analysis, to conclude that:

- The study resulted in lack of structured market supply channel in the area: Most of the farmers supply their produce for local collectors and consumer buyers in their vicinity. Small numbers of suppliers sell their produce through market channel i.e. producer, local collectors, and wholesalers to consumer buyers at the Hosanna market. Thus, the farmer doesn't gain fair income from their produce.
- The econometric analysis indicated that, Age of the producer, Education level, quantity of produce, Market information, Access to transportation, Distance to the nearest main market and Selling price of the avocado significantly influenced, ($p<0.05$) the market supply of the avocado.
- Age of the producer (β= -0.128) and education level of the producers (β= -0.103) were negatively influencing market supply performance of avocado fruit, whereas Livestock holding and farm size not associated with market supply performance of avocado fruit in the study area.

- The results show, due to far away from nearest market, lack of access for transportation and reduction from fair selling price resulted in very weak market supply performance. And it was also confirmed by focus groups' discussion, while the productivity of the avocado has been increasing year to year at household and community level which resulting in increasing of marketable supply of avocado fruit.

5.3 Recommendation

To achieve the objectives of the FIMSAF at two kebeles of Lemo woreda in Hadiya Zone, the following recommendations have been drawn to improve Performance of market supply of avocado fruit.

- As the study shows that market channel of avocado fruit in the study area was unorganized. The researcher recommends the producer farmers to be organized in to avocado producers' cooperative. By doing so the producers' cooperative can make various networks with big buyers, service providers, transporters. So that they can supply avocado for local and distant markets sustainably, their bargaining power increase and they can make fair price for their produces.
- To reverse distance to the nearest market might be create the market near to the producers and improve access for transportation. Also, to alleviate negative influence of high age and low education status of the producers on avocado market supply, train the aged producers on avocado marketing and encouraging youth to engage in avocado production and marketing is highly recommended. To maximize their income, improvements on the factors that significantly influencing market supply performance of avocado fruits in the study area needed.
- Generally doing organized market channel, and improving factors of market supply of avocado fruit, resulted in improving the market supply performance of the avocado fruit.

5.4 Suggestion for Further Study

As mentioned in the scope of this study methodologically limited in using only 5-pointlikert and the study has been done in one woreda of two kebeles in the title of factors influencing marketable supply of Avocado fruit. Therefore, for further research study recommended doing in the supply chain management of Avocado fruit in Hadiya zone and suggested to do market margin in each market channel.

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Appendix

WACHEMO UNIVERSITY

COLLEGE OF BUSINESSAND EONOMICS

MASTER OF BUSINESS ADMINISTRATION

English version of Questioner for Farmers':

Filled by Enumerator

This questionnaire is prepared by Eyuel Tesfaye, MBA student at Wachamo University, to conduct a study entitled by "factors influencing marketable supply of Avocado fruit the case of Lemo woreda, in Hadiya zone" and your response to this questionnaire will serve as source of information to the thesis for partial fulfillment of Master of Business Administration in wachemo University.

Dear respondents; Your response will be kept confidential, so that you are kindly requested to extend your cooperation honestly by providing relevant information in filling the following questionnaire. Thank you in advance for your kind cooperation and dedicating your time.

PART I-Demographic Characteristics, production and marketing of fruits of Avocado

1. Sex: Male (1) ☐ Female (0) ☐
2. Your age:_____

1) Less than 25
2) 25-35
3) 36-44
4) 45-55
5) 56-65
6) more than 65

3. Education level of the household head

1) Illiterate,
2) up to grade 5,

3) elementary completed,
4) junior school completed,
5) TVET College
6) First Degree and above

4. Number of cows holding,

1) 0
2) 1-3
3) 4-7
4) Above 7

5. Number of Oxen holding,

1) 0
2) 1-3
3) 4-7
4) Above 7

6. Number of Goats holding,

1) 0
2) 1-3
3) 4-7
4) Above 7

7. Number of Sheep holding,
   1) 0
   2) 1-3
   3) 4-7
   4) Above 7
8. Number of Donkeys holding,
   1) 0
   2) 1-3
   3) 4-7
   4) Above 7
9. Total Farm size (in hectare):_____-
   1) Less than 0.5
   2) 0.51-1.0
   3) 1.1-1.5
   4) More than 1.5
10. Area of avocado planted land, in hectares_____
   1) Less than 0.5
   2) 0.51 – 1 .5
   3) >1 .5
11. The quantity of yield per year _____kg /farm
   1) 20 -50
   2) 50 - 80
   3) 80 -120
   4) More than120

PART II - For each of the statements below that used 5 point Likert-type items, *circle* the number that indicates the degree to which you agree or disagree. There is no right or wrong answers; thank you in advance for your cooperation. This is modified from Mohr et al. (1996) and Kumar et al. (1996)

S/N	Statements	Strongly Disagree (1)	Disagree (2)	Neutral (3)	Agree (4)	Strongly Agree (5)
1	**Market channel**	1	2	3	4	5
1.1	I can sell all produce directly for the consumer buyers	1	2	3	4	5
1.2	I am supplying the produce for the local collectors but not directly to the consumer	1	2	3	4	5
1.3	I am supplying the produce for the whole sellers	1	2	3	4	5
1.4	I am supplying the produce for the retailers	1	2	3	4	5
2	**Market performance**	1	2	3	4	5
2.1	There is high demand for avocado fruit in the market	1	2	3	4	5
2.2	I can sale all supplied avocado fruit in the market	1	2	3	4	5
2.3	I can get the reliable price from the sales of avocado fruit	1	2	3	4	5
2.4	Market price of avocado fruit is exceeds from the cost of produce	1	2	3	4	5
2.5	I am happy in marketing of avocado fruit	1	2	3	4	5
2.6	I want to expand the farm of Avocado tree	1	2	3	4	5

PART III - for each of the statements below that used 5 point Likert-type items, *circle* the number that indicates the degree to which you agree or disagree. There is no right or wrong answers; thank you in advance for your cooperation.

S/N	Statements	Strongly Disagree (1)	Disagree (2)	Neutral (3)	Agree (4)	Strongly Agree (5)
	Factors of Market supply of Avocado fruit	1	2	3	4	5
3	**Quantity Produce**	1	2	3	4	5
3.1	I am in producing excess avocado fruit	1	2	3	4	5
3.2	My produce is enough for selling	1	2	3	4	5
3.3	I am supplying excess produce for the market	1	2	3	4	5
3.4	I am in selling of much Avocado fruit	1	2	3	4	5
3.5	The number of fruit trees are many	1	2	3	4	5
3.6	The produce fruit increasing yearly	1	2	3	4	5
4	**Market information**	1	2	3	4	5
4.1	Market information is necessary to me	1	2	3	4	5
4.2	I get necessary market information to sell avocado at the market	1	2	3	4	5
4.3	With a good market information I get a good market price	1	2	3	4	5
4.4	I use mobile phone to get market information from other people	1	2	3	4	5
4.5	I am using mobile phone	1	2	3	4	5
4.6	The DA's are tell us market information	1	2	3	4	5
4.7	People in our area exchange each other market information for avocado	1	2	3	4	5
5	**Access for transportation**	1	2	3	4	5
5.1	I am using all season functional road	1	2	3	4	5
5.2	We have dry roads in wet season to travel to the market for sell avocado	1	2	3	4	5
5.3	The road is good to transport avocado to the market	1	2	3	4	5
5.4	I can get the truck (car) at any time to take avocado to the market	1	2	3	4	5
5.5	Transportation cost to the market is reasonable	1	2	3	4	5
5.6	My resident is near to main road	1	2	3	4	5
6	**Distance to the nearest market**	1	2	3	4	5

S/N	Statements	Strongly Disagree (1)	Disagree (2)	Neutral (3)	Agree (4)	Strongly Agree (5)
6.1	I am near to the main market	1	2	3	4	5
6.2	Main market is too close for me	1	2	3	4	5
6.3	I pay low transportation cost to main market	1	2	3	4	5
6.4	I can find the main market in short walk	1	2	3	4	5
6.5	It takes few minutes to travel to the market for me	1	2	3	4	5
7	**Selling price**	1	2	3	4	5
7.1	I usually sell my avocado produce for a good price	1	2	3	4	5
7.2	The cost of produce are lower than the selling price	1	2	3	4	5
7.3	I can make a decision of selling price on my produce in the market	1	2	3	4	5
7.4	We farmers are happy on the market price of avocado	1	2	3	4	5
7.5	The price that we get from avocado gives a good profit for us	1	2	3	4	5
7.6	Buyers pay good price for avocado in the market	1	2	3	4	5
7.7	Selling price of the produce is motivating me to produce more	1	2	3	4	5

To be filled by Enumerator

This questionnaire is prepared by Eyuel Tesfaye, MBA student at Wachamo University, to conduct a study entitled by "factors influencing marketable supply of Avocado fruit the case of Lemo woreda, in Hadiya zone" and your response to this questionnaire will serve as source of information to the thesis for partial fulfillment of Master of Business Administration in Wachemo University.

Dear respondents; Your response will be kept confidential, so that you are kindly requested to extend your cooperation honestly by providing relevant information in filling the following questionnaire. Thank you in advance for your kind cooperation and dedicating your time.

Part V: DemographicCharacteristics and marketing of fruits of Avocado

1 Sex: Male (1)☐ Female (0) ☐

2 Your age:_____

1) Less than 25
2) 25-35
3) 36-44
4) 45-55
5) 56-65
6) more than 65

3 Education level of the household head

1) Illiterate,
2) up to grade 5,
3) elementary completed,
4) junior school completed,
5) TVET College
6) First Degree and above

PART VI- For each of the statements below that used 5 point Likert-type items, circle the number that indicates the degree to which you agree or disagree. There is no right or wrong answers; thank you in advance for your cooperation.

S/N	Statements	Strongly Disagree (1)	Disagree (2)	Neutral (3)	Agree (4)	Strongly Agree (5)
8	**Market channel**	1	2	3	4	5
8.1	I can sell all produce directly for the consumer buyers	1	2	3	4	5
8.2	I am supplying the produce for the retailers	1	2	3	4	5
9	**Market supply performance of Avocado fruit**	1	2	3	4	5
9.1	I had have good profit in the last years from avocado fruit sell	1	2	3	4	5
9.2	I want to continue Avocado fruit sale in the future	1	2	3	4	5
9.3	I had reliable market information before taking the produce from collectors and producers	1	2	3	4	5
9.4	I had the nearby market price information before sold of avocado fruit	1	2	3	4	5
9.5	Here was good selling prices for avocado fruit in the market	1	2	3	4	5
9.6	I could decided the selling price of avocado fruits in market	1	2	3	4	5
9.7	Good Transportation was accessibility to collect and sell the fruit of Avocado	1	2	3	4	5
9.8	Avocado supply from producers and local collectors were good in the past years	1	2	3	4	5

Thank you, for your co-operation and patience in filling this questionnaire

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Amharic version Questioner for Farmers':

Filled by enumerator

ዋቻሞ ዩኒቨርሲቲ

የቢዝነስና ኢኮኖሚክስ ኮሌጅ ማስተርስ ዲግሪ በቢዝነስ አስተዳደር

ለአርሶ አደሮች የተዘጋጀ ቃለ መጠይቅ፦ በተማሪው የሚሞላ

ይህ ጥያቄ የተዘጋጀው በተማሪ ኢዩኤል ተስፋዬ ሲሆን ርዕሱም በሀዲያ ዞን በሌሞ ወረዳ የአቮካዶ ፍራፍሬን ለገበያ ለማቅረብ ተዕዕኖ የሚኖራቸውን ሁኔታዎች መለየት ነው።። የእርሶ ምላሽ ለአላማ መሳካት አስተዋዕዖው ከፍተኛ ነው።።

የእርስዎ ምላሽ ሚስጥራዊነቱ የተጠበቀ በመሆኑ ትክክለኛውን ምላሽ በመስጠት እንዲተባበሩኝ በትህትና እየጠየቅኩ ለሚያደርጉልኝ ትብበርና ስለ ጊዜዎ በቅድሚያ አመሰግናለሁ።።

1. **የግል ሁኔታ መረጃ**

1.1 **ፆታ**: **ወንድ (1)** **ሴት(0)**

1.2 **እድሜ**:_____

1) **ከ 25 አመት በታች**
2) 25-35 **አመት**
3) 36-44 **አመት**
4) 45-55 **አመት**
5) 56-65 **አመት**
6) **ከ65 አመት በላይ**

1.3 **የአባወራው/የእማወራዋ የትምህርት ደረጃ**

1) **የቀለም ትምህርት ያልተማሩ,**
2) **እስከ 5ኛ ክፍል የተማሩ**
3) **የመጀመሪያደረጃ የጨረሱ(እስከ 8ኛ ክፍል)**
4) **መካከለኛ ደረጃን(እስከ 10ኛ) የጨረሱ**
5) **ቴክኒክና ሞያ የጨረሱ**
6) **የመጀመሪያ ዲግሪና ከዚያ በላይ ያላቸው**

1.4 **የላሞች ብዛት,**

1) 0
2) 1-3
3) 4-7
4) **ከ 7 በላይ**

1.5 **የእርሻ በሬዎች ብዛት**

1) 0
2) 1-3
3) 4-7
4) **ከ 7 በላይ**

1.6 **የፍየሎች ብዛት,**

1) 0
2) 1-3
3) 4-7
4) **ከ 7 በላይ**

1.7 **የበጎች ብዛት**

1) 0
2) 1-3
3) 4-7
4) **ከ 7 በላይ**

1.8 የአሀዮች ብዛት

1) 0
2) 1-3
3) 4-7
4) ከ 7 በላይ

1.9 የመሬት ይዞታ በሄክታር:_____-

1. ከ 0.5 ሄ/ር በታች
2. 0.51-1.0 ሄ/ር
3. 1.1-1.5 ሄ/ር
4. ከ 1.5 ሄ/ር በላይ

1.10 የአቮካዶ ማሳ/ይዞታ ስፋት_በሄ/ር_____

ı) ከ 0.25 — 0.5 ሄ/ር
2) ከ 0.51 — 1 .5 ሄ/ር
3) ከ1 .5 ሄ/ር በላይ

1.11 በአመት ውስጥ የተመረተ የአቮካዶ ምርት ኪ/ግ በማሳ(በይዞታ) _____

1) 20 -50 ኪ/ግ
2) 50 - 80 ኪ/ግ
3) 80 -120 ኪ/ግ
4) ከ 120 ኪ/ግ በላይ

2. ለእያንዳንዱ ጥያቄ ባለ አምስት ነጥብ አማራጭ ተሰጥቷል፤ ስለዚህ እርስዎ ለእያንዳንዱ ጥያቄ መልስ ይሆናል ብለው ያመኑበትን ቁጥር በማክበብ ይመልሱ። *እዚህ ላይ ትክክል ወይም*

ተ/ቁ	ጥያቄዎች/ Statements	በጣም አልስማማም	አልስማማም	እርግጠኛ አይደለሁ	እስማማለሁ	ከጠም እስማማለሁ
1	**የግብይት ሰንሰለትን በተመለከተ**					
1.1	ያመረትኩትን ምርት በሙሉ ለተጠቃሚ መሸጥ እችላለሁ	1	2	3	4	5
1.2	ምርቱን በቀጥታ ለተጠቃሚ ሳይሆን በአካባቢያችን ላሉ ሰብሳቢዎች እሸጣለሁ	1	2	3	4	5
1.3	ምርቱን በሙሉ በቀጥታ ለጅምላ ነጋዴ እሸጣለሁ	1	2	3	4	5
1.4	ምርቱን በሙሉ ለቸርቻሪ ነጋዴዎች እሸጣለሁ	1	2	3	4	5
2	**የግብይት ብቃት/ሁኔታ**					
2.1	በአካባቢዉ የአቮካዶ ፍላጎት ከፍተኛ ነው	1	2	3	4	5
2.2	ወደ ገበያ የወሰድኩትን ሁሉንም ምርት እሸጣለሁ	1	2	3	4	5
2.3	ለአቀረብኩት ምርት ተመጣጣኝ ክፍያ አገኛለሁ	1	2	3	4	5
2.4	የአቮካዶ ፍራፍሬ የገበያ ዋጋ ከምርት ወጪ አይበልጥም	1	2	3	4	5
2.5	በአቮካዶ የገበያ ዋጋ ደስተኛ አይደለሁም	1	2	3	4	5
2.6	አቮካዶ ማምረት በስፋት እቀጥላለሁ	1	2	3	4	5

የተሳሳተ መልስ የለም የእርስዎ ስምምነት ምን እንደሆነ ለማየት ብቻ ነው።

3. ለእያንዳንዱ ጥያቄ ባለ አምስት ነጥብ አማራጭ ተሰጥቷል፤ ስለዚህ እርስዎ ለእያንዳንዱ ጥያቄ መልስ ይሆናል ብለው ያመኑበትን ቁጥር በማክበብ ይመልሱ። *እዚህ ላይ ትክክል ወይም የተሳሳተ መልስ የለም የእርስዎ ስምምነት ምን እንደሆነ ለማየት ብቻ ነው።*

ተ/ቁ	ጥያቄዎች/ Statements	በጣም አልስማማም	አልስማማም	እርግጠኛ አይደለሁ	እስማማለሁ	በጣም እስማማለሁ
	የአቮካዶ ፍራፍሬ ለገበያ የማቅረብ ተዕዕኖዎች					
3	**የምርት መጠን**					
3.1	እጅግ በጣም ከፍተኛ ምርት አመርታለሁ	1	2	3	4	5
3.2	የማመርተዉ ምርት ለሽያጭ አይተርፍም	1	2	3	4	5
3.3	ትርፍ ምርቴን ለገበያ አቀርባለሁ	1	2	3	4	5
3.4	በርካታ የአቮካዶ ምርት እሸጣለሁ	1	2	3	4	5
3.5	ያሉኝ የአቮካዶ ተክሎች ጥቂት ናቸው	1	2	3	4	5
3.6	የአቮካዶ ምርት ቤአመቱ እየጨመረ ነው	1	2	3	4	5
4	**የገበያ መረጃ**					
4.1	የገበያ መረጃ በጣም እፈልጋለሁ	1	2	3	4	5
4.2	ጠቃሚ የገበያ መረጃ ማግኘት እችላለሁ	1	2	3	4	5
4.3	ጥሩ የገበያ መረጃ ስለማገኝ በጥሩ ዋጋ እሸጣለሁ	1	2	3	4	5
4.4	ከሰዎች የገበያ መረጃ ለማግኘት ተንቀሳቃሽ ስልክ እጠቀማለሁ	1	2	3	4	5
4.5	ተንቀሳቃሽ ስልክ ተጠቃሚ ነኝ	1	2	3	4	5
4.6	የግብርና ባለሞያዎች የገበያ መረጃ ይነግሩናል	1	2	3	4	5
4.7	በአካባቢያችን ያለነው ነዋሪዎች የገበያ መረጃ እንለዋወጣለን	1	2	3	4	5
5	**የትራንስፖርት አቅርቦት ምቹነት**					
5.1	አመቱን ሙሉ በሚያገለግል መንገድ እጠቀማለሁ	1	2	3	4	5
5.2	የአቮካዶ ምርት ወደ ገበያ ለማቅረብ የሚመች መንገድ አለን	1	2	3	4	5

ተ/ቁ	ጥያቄዎች/ Statements	በጣም አልስማማም	አልስማማም	እርግጠኛ አይደለሁ	እስማማለሁ	በጠም አስማማለሁ
5.3	መንገዱ የአቮካዶ ምርትን ወደ ገበያ ለማድረስ ምቹ ነው	1	2	3	4	5
5.4	በማንኛውም ጊዜ ትራንስፖርት/ማጓጓዣ/ ማግኘት እችላለሁ	1	2	3	4	5
5.5	ወደ ገበያ ለሚደረግ ትራንስፖርት ወጪዉ ተመጣጣኝ ነው	1	2	3	4	5
5.6	መኖሪያዬ ለዋና መንገድ ቅርብ ነው	1	2	3	4	5
6	ቅርብ ካለው ገበያ ያለው ርቀት					
6.1	በቅርብ ለሚገኘው ገበያ ቅርብ ነኝ	1	2	3	4	5
6.2	ዋናው ገበያ በጣም ይርቀኛል	1	2	3	4	5
6.3	ለትራንስፖርት የምከፍለው ጥቂት ነው	1	2	3	4	5
6.4	በጥቂት የእግር ጉዞ ዋናው ገበያ ጋ እደርሳለሁ	1	2	3	4	5
6.5	በጥቂት ደቂቃ የትራንስፖርት ጉዞ ገበያ ጋ እደርሳለሁ	1	2	3	4	5
7	የመሸጫ ዋጋ					
7.1	የአቮካዶ ምርቴን ሁልጊዜ በጥሩ ዋጋ እሸጣለሁ	1	2	3	4	5
7.2	የማምረቻ ዋጋው ከመሸጫው ዋጋ ያንሳል	1	2	3	4	5
7.3	የአቮካዶ ምርትን የመሸጫ ዋጋ መወሰን እችላለሁ	1	2	3	4	5
7.4	በአቮካዶ ፍሬ የመሸጫ ዋጋ ደስተኞች ነን	1	2	3	4	5
7.5	የምርት ሽያጭ ዋጋ ጥሩ ትርፋማ አድርጎናል	1	2	3	4	5
7.6	የአቮካዶ ገዢዎች ጥሩ ክፍያ ይከፍላሉ	1	2	3	4	5
7.7	የአቮካዶ ምርት መሸጫ ዋጋው የበለጠ እንዳመርት አነሳስቶኛል	1	2	3	4	5

ሥለትብብርዎ እና ጥቂዎቹን ለመመለስ ስላሳዩት ትዕግስት በጣም አመሰግናለሁ !!

ለነጋዴዎች የተዘጋጀ ጥያቄ፡

ጥያቄዎቹ የሚሞሉት በጠያቂው/በተማሪዉ አማካኝነት ነው፡፡

ይህ ጥያቄ የተዘጋጀው በተማሪ ኢዩኤል ተስፋዬ ሲሆን ርዕሱም በሀዲያ ዞን በሌሞ ወረዳ የአቮካዶ ፍራፍሬን ለገበያ ለማቅረብ ተፅዕኖ የሚኖራቸውን ሁኔታዎች መለየት ነው፡፡ የእርሶ ምላሽ ለአላማ መሳካት አስተዋፅዖው ከፍተኛ ነው፡፡

የእርስዎ ምላሽ ሚስጥራዊነቱ የተጠበቀ በመሆኑ ትክክለኛውን ምላሽ በመስጠት እንዲተባበሩኝ በትህትና እየጠየቅኩ ለሚያደርጉልኝ ትብበርና ስለ ጊዜዎ በቅድሚያ አመሰግናለሁ፡፡

1. **የግል ሁኔታ መረጃ**
2. **ፆታ:** ☐ **ወንድ** (1) ☐ **ሴት**(0)
3. **እድሜ:**_____
   1) **ከ 25 አመት በታች**
   2) 25-35 **አመት**
   3) 36-44 **አመት**
   4) 45-55 **አመት**
   5) 56-65 **አመት**
   6) **ከ**65 **አመት በላይ**
4. **የአባወራው/የእማወራዋ የትምህርት ደረጃ**
   ı) **የቀለም ትምህርት ያልተማሩ,**
   2) **እስከ** 5**ኛ ክፍል የተማሩ**
   3) **የመጀመሪያደረጃ ት/ት የጨረሱ(እስከ** 8**ኛ ክፍል)**
   4) **መካከለኛ ደረጃን ት/ ት(እስከ** 10**ኛ) የጨረሱ**
   5) **ቴክኒክና ሞያ የጨረሱ**
   6) **የመጀመሪያ ዲግሪና ከዚያ በላይ የተማሩ**

2. ለእያንዳንዱ ጥያቄ ባለ አምስት ነጥብ አማራጭ ተሰጥቷል፤ ስለዚህ እርስዎ ለእያንዳንዱ ጥያቄ መልስ ይሆናል ብለው ያመኑበትን ቁጥር በማክበብ ይመልሱ፡፡ እዚህ ላይ ትክክል ወይም የተሳሳተ መልስ የለም የእርስዎ ስምምነት ምን እንደሆነ ለማየት ብቻ ነው፡፡

ተ/ቁ	ጥያቄዎች/ Statements	በጣም አልስማማም	አልስማማ	እርግጠኛ አይደለሁ	እስማማለሁ	በጠም እስማማለሁ
8	**የገበያ ሰንሰለት**					
8.1	**የተቀበልኩትን ምርት በሙሉ ለተጠቃሚ መሸጥ እችላለሁ**	1	2	3	4	5
8.2	**ሁሉንም ምርት ለቸርቻሪዎች አቀርባለሁ**	1	2	3	4	5
9	**የገበያ ብቃትን እና የግብይት ተፅዕኖዎችን ለመለካት**					
9.1	**ባለፉት አመታት ከአቮካዶ ፍሬ ሽያጭ ጥሩ ትርፍ አግኝቻለሁ**	1	2	3	4	5

9.2	በአቮካዶ ሽያጭ ስራ ስቀጥላለሁ	1	2	3	4	5
9.3	የአቮካዶ ምርት ከአርሶአደሮችና ከሰብሳቢዎች ከመቀበሌ በፊት ትክክለኛ የገበያ መረጃ አገኛለሁ	1	2	3	4	5
9.4	በእጄ ያለውን ምርት ከመሸጤ በፊት በአቅራቢያዬ ያለውን የመሸጫ ዋጋ መረጃ አገኛለሁ	1	2	3	4	5
9.5	ባለሁበት አካባቢ የአቮካዶ መሸጫ ዋጋ ጥሩ ነው	1	2	3	4	5
9.6	የአቮካዶ ፍሬ የመሸጫ ዋጋ መወሰን አልቻልኩም	1	2	3	4	5
9.7	የአቮካዶ ፍሬ ለመሰብሰብና ለመሸጥ የመንገዣ አቅርቦት ጥሩ ነበር	1	2	3	4	5
9.8	ከአምራቾችና ከሚሰበስቡ ሰዎች የአቮካዶ ፍሬ አቅርቦት ጥሩ ነበር	1	2	3	4	5

ሥለትብብርዎ እና ጥቄዎቹን ለመመለስ ስላሳዩት ትዕግስት በጣም አመሰግናለሁ!!

Data Analysis

```
RELIABILITY
  /VARIABLES=Q_1.1 Q_1.2 Q_1.3 Q_1.4
  /SCALE('ALL VARIABLES') ALL
  /MODEL=ALPHA
  /STATISTICS=DESCRIPTIVE SCALE
  /SUMMARY=TOTAL.
```

Scale: ALL VARIABLES

Case Processing Summary

		N	%
Cases	Valid	115	100.0
	Excluded[a]	0	.0
	Total	115	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	N of Items
.887	4

Item Statistics

	Mean	Std. Deviation	N
I can sell all produce directly for the consumer buyers	4.09	.732	115
I am supplying the produce for the local collectors but not directly to the consumer	4.30	.772	115
I am supplying the produce for the whole selers	3.93	.943	115
I am supplying the produce for the the retailers	4.05	.647	115

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
I can sell all produce directly for the consumer buyers	12.28	4.027	.927	.791
I am supplying the produce for the local collectors but not directly to the consumer	12.07	4.451	.687	.878
I am supplying the produce for the whole selers	12.43	3.879	.677	.900
I am supplying the produce for the the retailers	12.31	4.656	.793	.848

Scale Statistics

Mean	Variance	Std. Deviation	N of Items
16.37	7.286	2.699	4

```
RELIABILITY
  /VARIABLES=Q_2.1 Q_2.2 Q_2.3 Q_2.4 Q_2.5 Q_2.6
  /SCALE('ALL VARIABLES') ALL
  /MODEL=ALPHA
  /STATISTICS=DESCRIPTIVE SCALE
  /SUMMARY=TOTAL.
```

Case Processing Summary

		N	%
Cases	Valid	115	100.0
	Excluded[a]	0	.0
	Total	115	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	N of Items
.951	6

	Mean	Std. Deviation	N
There is high demand for avocado fruit in the market	3.33	.508	115
I can sele all supplied avocado fruit in the market	3.34	.544	115
I can get the reliable price from the sales of avocado fruit	3.28	.522	115
Market price of avocado fruit is exceeds from the cost of produce	3.30	.516	115
I am happy in marketing of avocado fruit	3.33	.558	115
I want to expand the farm of Avocado tree	3.36	.516	115

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
There is high demand for avocado fruit in the market	16.61	5.539	.945	.931
I can sele all supplied avocado fruit in the market	16.60	5.540	.867	.940
I can get the reliable price from the sales of avocado fruit	16.66	5.770	.803	.947
Market price of avocado fruit is exceeds from the cost of produce	16.63	5.620	.888	.938
I am happy in marketing of avocado fruit	16.61	5.644	.794	.949
I want to expand the farm of Avocado tree	16.58	5.789	.806	.947

Scale Statistics

Mean	Variance	Std. Deviation	N of Items
19.94	8.058	2.839	6

```
RELIABILITY
  /VARIABLES=Q_3.1 Q_3.2 Q_3.3 Q_3.4 Q_3.5 Q_3.6
  /SCALE('ALL VARIABLES') ALL
  /MODEL=ALPHA
  /STATISTICS=DESCRIPTIVE SCALE
  /SUMMARY=TOTAL.
```

Case Processing Summary

		N	%
Cases	Valid	115	100.0
	Excluded[a]	0	.0
	Total	115	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	N of Items
.875	6

Item Statistics

	Mean	Std. Deviation	N
I am in producing excess avocado fruit	4.23	.597	115
My produce is enough for selling	4.21	.408	115
I am supplying excess produce for the market	4.13	.554	115
I am in selling of much Avocado fruit	4.06	.625	115
The number of fruit trees are many	4.24	.470	115
The produce fruit increasing yearly	4.17	.606	115

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
I am in producing excess avocado fruit	20.81	4.893	.546	.879
My produce is enough for selling	20.83	5.402	.591	.870
I am supplying excess produce for the market	20.91	4.484	.809	.831
I am in selling of much Avocado fruit	20.98	4.105	.866	.818
The number of fruit trees are many	20.80	5.284	.549	.874
The produce fruit increasing yearly	20.88	4.406	.754	.841

Scale Statistics

Mean	Variance	Std. Deviation	N of Items
25.04	6.691	2.587	6

```
RELIABILITY
  /VARIABLES=Q_4.1 Q_4.2 Q_4.3 Q_4.4 Q_4.5 Q_4.6 Q_4.7
  /SCALE('ALL VARIABLES') ALL
  /MODEL=ALPHA
  /STATISTICS=DESCRIPTIVE SCALE
  /SUMMARY=TOTAL.
```

Case Processing Summary

		N	%
Cases	Valid	115	100.0
	Excluded[a]	0	.0
	Total	115	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	N of Items
.877	7

Item Statistics

	Mean	Std. Deviation	N
Market information is necessary to me	4.46	.501	115
I get necessary market information to sell avocado at the market	3.37	.486	115
With a good market information I get a good market price	4.49	.502	115
I use mobile phone to get market information from other people	4.43	.497	115
I am using mobile phone	4.45	.500	115
The DA's are tell us market information	4.55	.500	115
People in our area exchange each other market information for avocado	4.37	.484	115

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Market information is necessary to me	25.65	5.106	.693	.855
I get necessary market information to sell avocado at the market	26.74	6.054	.266	.906
With a good market information I get a good market price	25.63	4.798	.853	.833
I use mobile phone to get market information from other people	25.69	4.884	.818	.838
I am using mobile phone	25.66	4.928	.788	.842
The DA's are tell us market information	25.57	5.265	.615	.865
People in our area exchange each other market information for avocado	25.75	5.313	.618	.865

Scale Statistics

Mean	Variance	Std. Deviation	N of Items
30.11	6.926	2.632	7

```
RELIABILITY
  /VARIABLES=Q_5.1 Q_5.2 Q_5.3 Q_5.4 Q_5.5 Q_5.6
  /SCALE('ALL VARIABLES') ALL
  /MODEL=ALPHA
  /STATISTICS=DESCRIPTIVE SCALE
  /SUMMARY=TOTAL.
```

Case Processing Summary

		N	%
Cases	Valid	115	100.0
	Excluded[a]	0	.0
	Total	115	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	N of Items
.876	6

Item Statistics

	Mean	Std. Deviation	N
I am using all season functional road	2.21	.521	115
We have good roads to travel to the market to sell avocado	2.23	.563	115
The road is good to transport avocado to the market	2.17	.545	115
I can get the truck (car) at any time to take avocado to the market	2.83	.417	115
Transportation cost to the market is reasonable	2.11	.659	115
My resident is near to main road	2.35	.563	115

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
I am using all season functional road	11.69	4.480	.886	.821
We have good roads to travel to the market to sell avocado	11.67	4.539	.772	.839
The road is good to transport avocado to the market	11.73	4.585	.783	.837
I can get the truck (car) at any time to take avocado to the market	11.06	5.987	.268	.908
Transportation cost to the market is reasonable	11.78	3.996	.864	.819
My resident is near to main road	11.55	5.057	.528	.881

Scale Statistics

Mean	Variance	Std. Deviation	N of Items
13.90	6.708	2.590	6

```
RELIABILITY
  /VARIABLES=Q_6.1 Q_6.2 Q_6.3 Q_6.5
  /SCALE('ALL VARIABLES') ALL
  /MODEL=ALPHA
  /STATISTICS=DESCRIPTIVE SCALE
  /SUMMARY=TOTAL.
```

Case Processing Summary

		N	%
Cases	Valid	115	100.0
	Excluded[a]	0	.0
	Total	115	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	N of Items
.815	4

Item Statistics

	Mean	Std. Deviation	N
I am near to the main market	2.73	.892	115
Main market is too close for me	2.26	.796	115
I pay low transportation cost to main market	2.31	.705	115
It takes few minutes to travel to the market for me	2.98	.749	115

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
I am near to the main market	7.56	3.144	.778	.693
Main market is too close for me	8.03	3.569	.731	.721
I pay low transportation cost to main market	7.97	4.622	.422	.854
It takes few minutes to travel to the market for me	7.30	3.950	.634	.769

Scale Statistics

Mean	Variance	Std. Deviation	N of Items
10.29	6.399	2.530	4

```
RELIABILITY
  /VARIABLES=Q_7.1 Q_7.2 Q_7.4 Q_7.5 Q_7.6 Q_7.7
  /SCALE('ALL VARIABLES') ALL
  /MODEL=ALPHA
  /STATISTICS=DESCRIPTIVE SCALE
  /SUMMARY=TOTAL.
```

Case Processing Summary

		N	%
Cases	Valid	115	100.0
	Excluded[a]	0	.0
	Total	115	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	N of Items
.812	6

Item Statistics

	Mean	Std. Deviation	N
I usually sell my avocado produce for a good price	3.67	.472	115
The cost of produce are lower than the selling price	3.90	.627	115
We farmers are happy on the market price of avocado	3.54	.501	115
The price that we get from avocado gives a good profit for us	3.65	.478	115
Buyers pay good price for avocado in the market	3.73	.483	115
Selling price of the produce is motivating me to produce more	4.09	.670	115

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
I usually sell my avocado produce for a good price	18.90	4.052	.640	.771
The cost of produce are lower than the selling price	18.68	4.255	.327	.843
We farmers are happy on the market price of avocado	19.03	3.964	.641	.769
The price that we get from avocado gives a good profit for us	18.92	3.792	.790	.740
Buyers pay good price for avocado in the market	18.84	3.940	.687	.760
Selling price of the produce is motivating me to produce more	18.49	3.743	.502	.806

Scale Statistics

Mean	Variance	Std. Deviation	N of Items
22.57	5.492	2.344	6

```
GET
  FILE='C:\ET document\Data for traders\10 final tradersdata.sav'.
DATASET NAME DataSet2 WINDOW=FRONT.
RELIABILITY
  /VARIABLES=Q_2.1 Q_2.2 Q_2.3 Q_2.4 Q_2.5 Q_2.6 Q_2.8
  /SCALE('ALL VARIABLES') ALL
  /MODEL=ALPHA.
```

Reliability Statistics

Cronbach's Alpha	N of Items
.811	7

```
RELIABILITY
  /VARIABLES=Q_2.1 Q_2.2 Q_2.3 Q_2.4 Q_2.5 Q_2.6 Q_2.8
  /SCALE('ALL VARIABLES') ALL
  /MODEL=ALPHA
  /STATISTICS=DESCRIPTIVE SCALE
  /SUMMARY=TOTAL.
```

Case Processing Summary

		N	%
Cases	Valid	10	100.0
	Excluded[a]	0	.0
	Total	10	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	N of Items
.811	7

Item Statistics

	Mean	Std. Deviation	N
I had have good profit in the last years from	4.00	.000	10
I want to continue Avocado fruit sale in the future	4.03	.184	10
I had reliable market information before taking	4.03	.184	10
I had the nearby market price information before sold of avocado fruit	4.03	.184	10
Here was good selling prices for avocado fruit in	4.03	.184	10
I could decided the selling price of avocado fruits in market	4.03	.184	10
Avocado supply from producers and local collectors were good in the past years	4.03	.184	10

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
I had have good profit in the last years from	24.15	.669	.000	.834
I want to continue Avocado fruit sale in the future	24.13	.420	.900	.714
I had reliable market information before taking	24.13	.420	.900	.714
I had the nearby market price information before sold of avocado fruit	24.13	.420	.900	.714
Here was good selling prices for avocado fruit in	24.13	.628	.024	.875
I could decided the selling price of avocado fruits in market	24.13	.573	.224	.844
Avocado supply from producers and local collectors were good in the past years	24.13	.420	.900	.714

Scale Statistics

Mean	Variance	Std. Deviation	N of Items
28.15	.669	.818	7

```
DATASET ACTIVATE DataSet1.
REGRESSION
  /MISSING LISTWISE
  /STATISTICS COEFF OUTS CI(95) R ANOVA COLLIN TOL
  /CRITERIA=PIN(.05) POUT(.10)
  /NOORIGIN
  /DEPENDENT MeanMarketSupplyperformance
  /METHOD=ENTER Age Edulevel LIVSTOCKH
FarmsizeMeanQuantityproduceMeanMarketInformationMeanTransportMeanDistancetomarketMeanPriceproduce
  /RESIDUALS HISTOGRAM(ZRESID) NORMPROB(ZRESID).
```

Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	Mean price of produce, Mean Market Information, Education level of respondent, Mean Transport, Mean Quantity produce, Average Livestock Holding per Household, Farm size, Mean Distance to market, Age of respondent	.	Enter

a. Dependent Variable: Mean Market Supply performance

b. All requested variables entered.

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.964[a]	.930	.924	.075

a. Predictors: (Constant), Mean price of produce, Mean Market Information, Education level of respondent, Mean Transport, Mean Quantity produce, Average Livestock Holding per Household, Farm size, Mean Distance to market, Age of respondent

b. Dependent Variable: Mean Market Supply performance

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	7.763	9	.863	154.509	.000[b]
	Residual	.586	105	.006		
	Total	8.349	114			

a. Dependent Variable: Mean Market Supply performance

b. Predictors: (Constant), Mean price of produce, Mean Market Information, Education level of respondent, Mean Transport, Mean Quantity produce, Average Livestock Holding per Household, Farm size, Mean Distance to market, Age of respondent

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B		Collinearity Statistics	
		B	Std. Error	Beta			Lower Bound	Upper Bound	Tolerance	VIF
1	(Constant)	.119	.132		.901	.369	-.143	.381		
	Age of respondent	-.034	.012	-.128	-2.917	.004	-.056	-.011	.348	2.870
	Education level of respondent	-.019	.008	-.103	-2.276	.025	-.036	-.002	.328	3.047
	Average Livestock Holding per Household	.018	.020	.028	.912	.364	-.021	.057	.689	1.451
	Farm size	-.016	.012	-.043	-1.355	.178	-.040	.007	.664	1.506
	Mean Quantity produce	.150	.018	.239	8.267	.000	.114	.186	.799	1.252
	Mean Market Information	.303	.019	.421	15.756	.000	.265	.341	.938	1.066
	Mean Transport	.199	.019	.318	10.633	.000	.162	.236	.749	1.335
	Mean Distance to market	.197	.014	.461	14.370	.000	.170	.225	.648	1.542
	Mean price of produce	.175	.021	.253	8.156	.000	.133	.218	.695	1.439

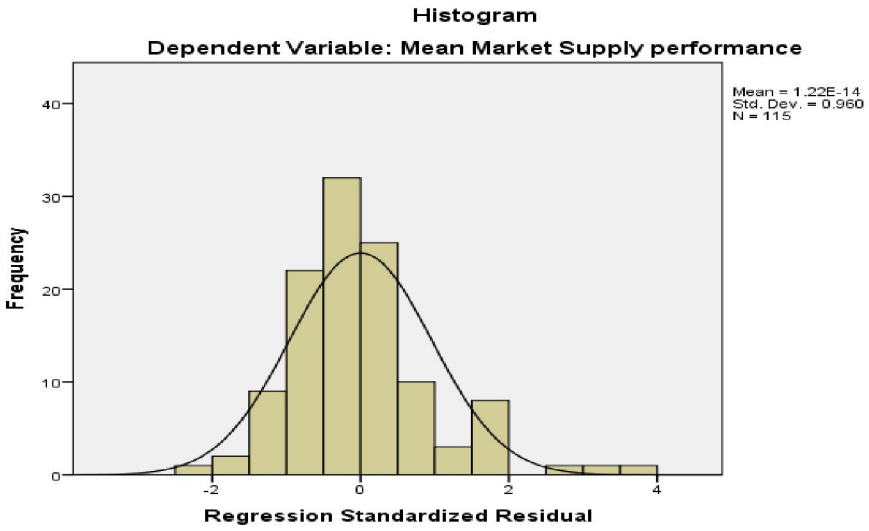
a. Dependent Variable: Mean Market Supply performance

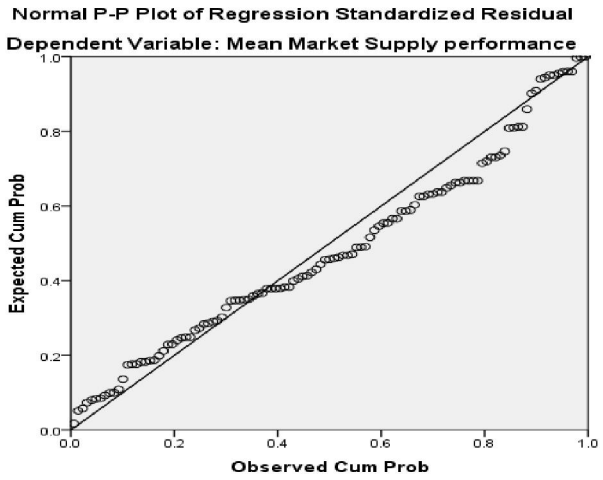
Residuals Statistics[a]

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	2.77	4.04	3.46	.261	115
Residual	-.158	.270	.000	.072	115
Std. Predicted Value	-2.636	2.221	.000	1.000	115
Std. Residual	-2.118	3.614	.000	.960	115

a. Dependent Variable: Mean Market Supply performance

Charts





SAVE OUTFILE='D:\Farmers 115 data and Analysis by SPSS\115 final Original data analysis.sav'
/COMPRESSED.

PHOTOS

Data collection from Male farmer

Data collection from Female farmer